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PAPER TRADE JOURNAL

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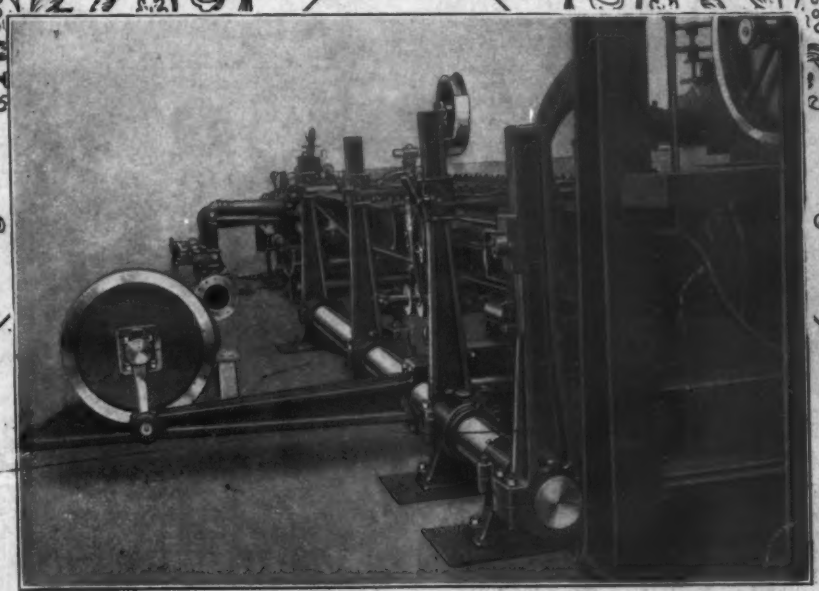
Vol. LXXXV, No. 14 OCTOBER 6, 1927 Per annum $4.00 Per Copy 10 Cents



View of Balance Wheel and Connecting Rod on Beloit Shake

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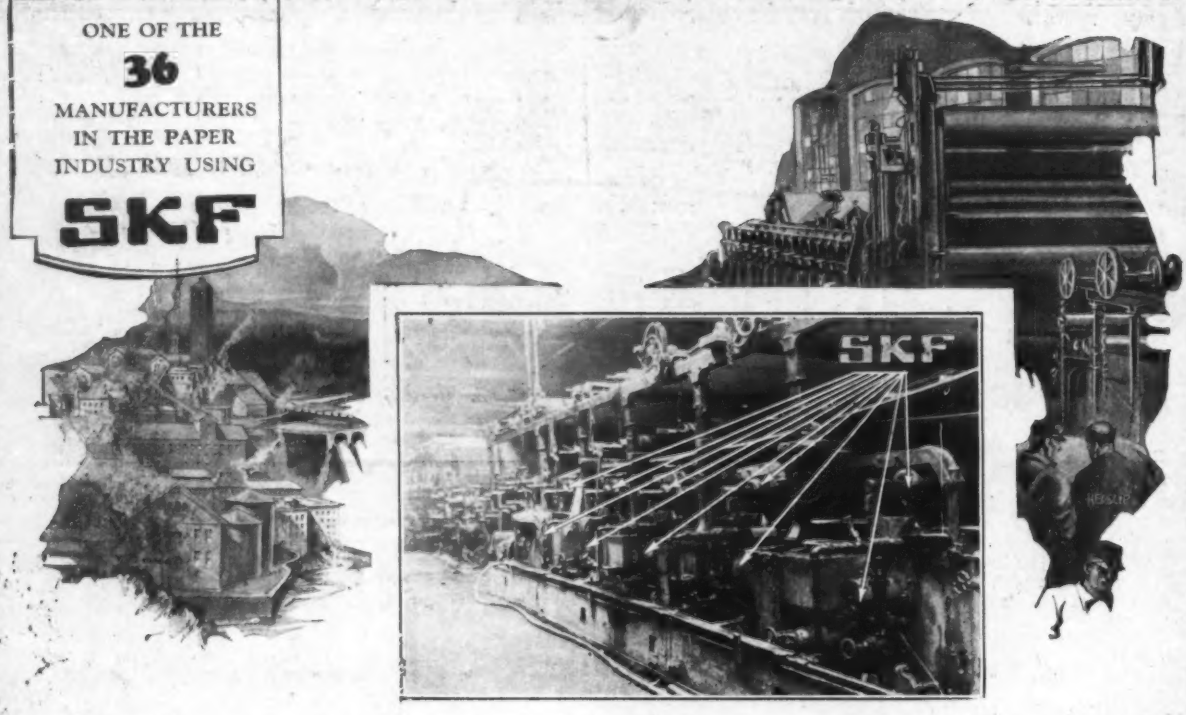

"Profitable Investment," says Supt. of Mill Where SKF Bearings Save $3,996.10 Yearly

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Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 FIFTY-SIXTH YEAR Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa.
EXECUTIVE AND EDITORIAL OFFICES: 10 EAST 39th STREET, NEW YORK CITY. CHICAGO: 123 West Madison Street, Chicago, Ill.

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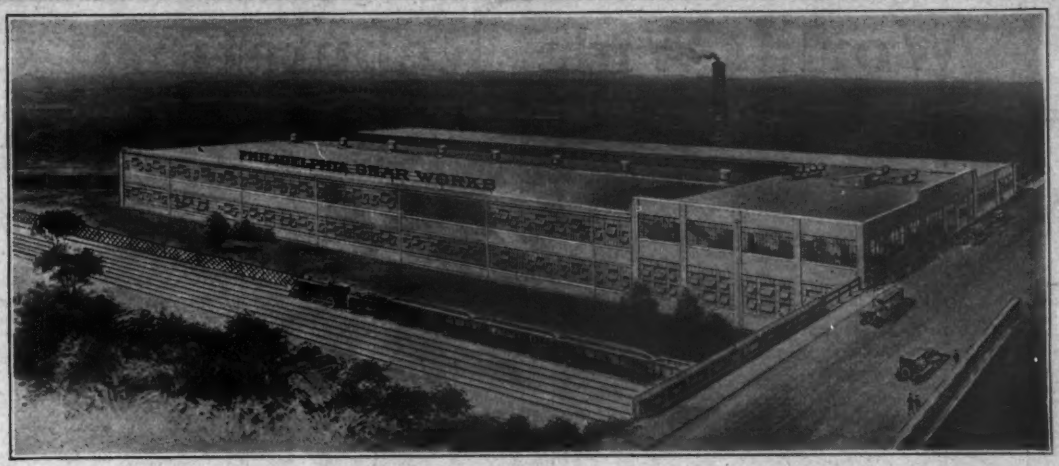

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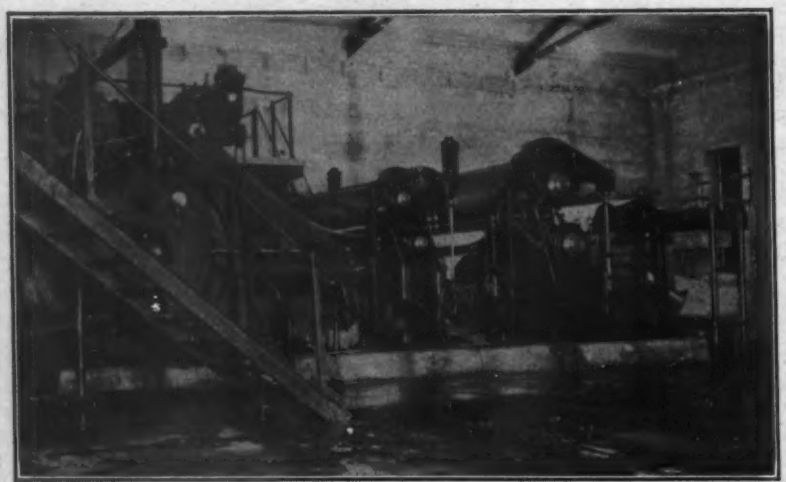

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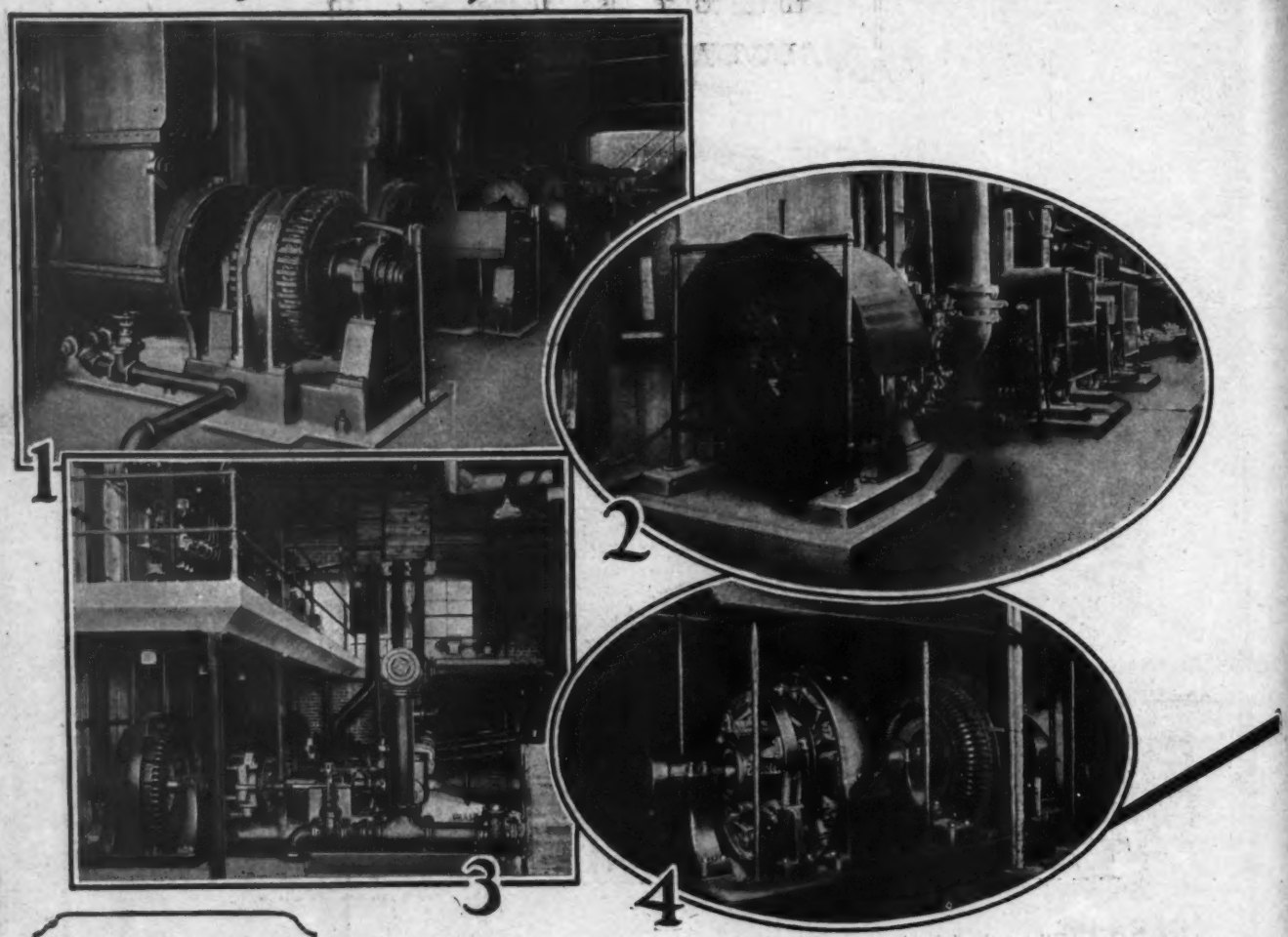

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Use more synchronous motors

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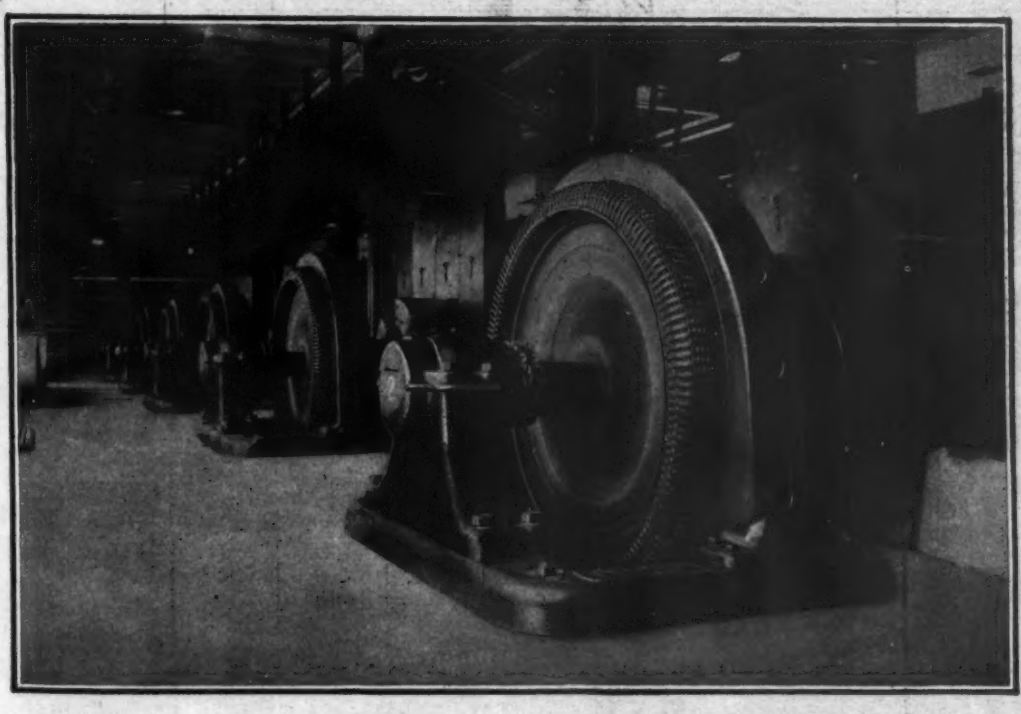
General Electric places at your disposal the services of engineers who can offer you expert advice as to every application of synchronous motors in the paper mill. Write or phone your nearest G-E office.



G-E 2400-h.p., synchronous motors, each driving two magazine pulp grinders

107-18

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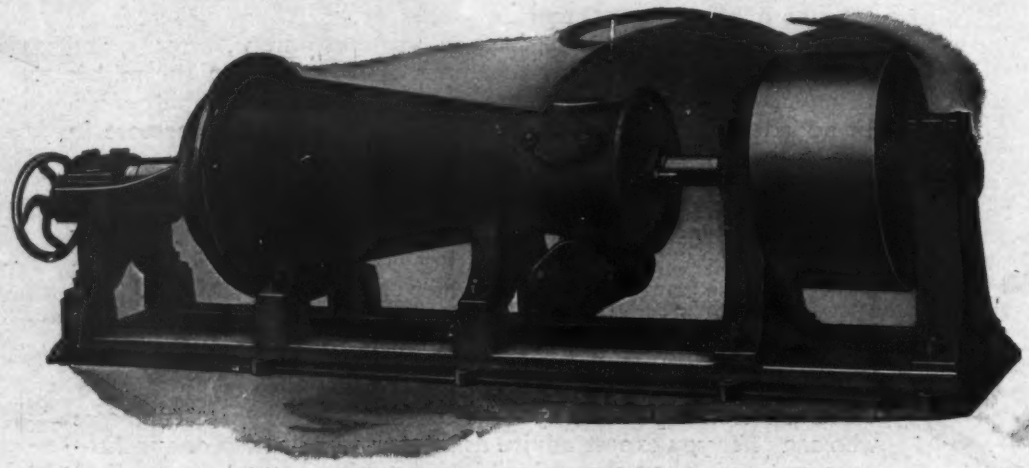
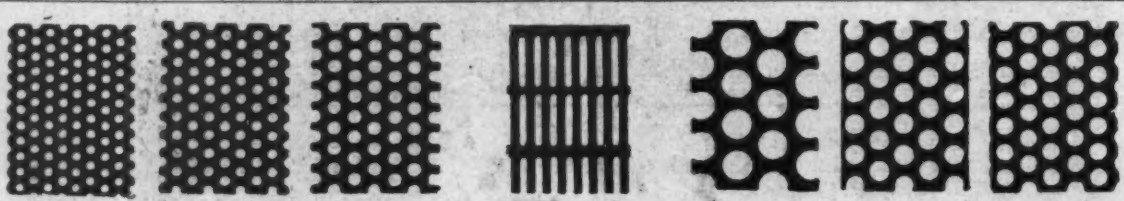
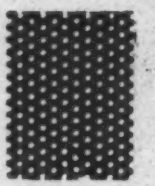


NO. 60 JORDAN ENGINE





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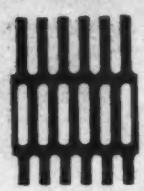

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The Accumulator also permits of maximum ***plant efficiency*** by supplying steam when it is needed and in the quantity it is needed. Sudden peak demands are instantly met—"heating up" time is reduced. Every operator has steam the instant he wants it—***and at uniform pressure.***

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Write for details. Bulletin PJ describes installations already made.

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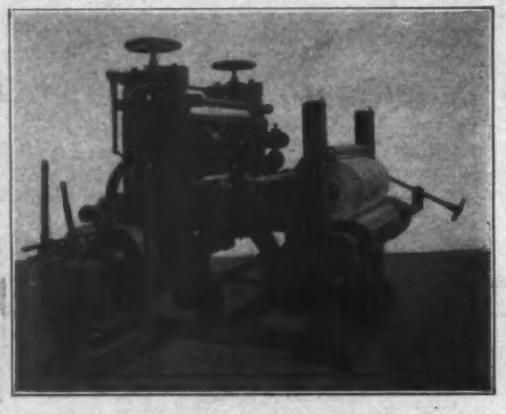

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Equipment includes large diameter steel and paper adjustable rolls, quick lifting rig, slitters and trimmers, automatic stop and double drum winder that produces hard bundle with straight sides.

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Air, always present between crystals of granite, is compressed when the sheet passes through the nip of the press rolls. The air then expands immediately, forcing the sheet away from the roll and prevents running up or sticking.

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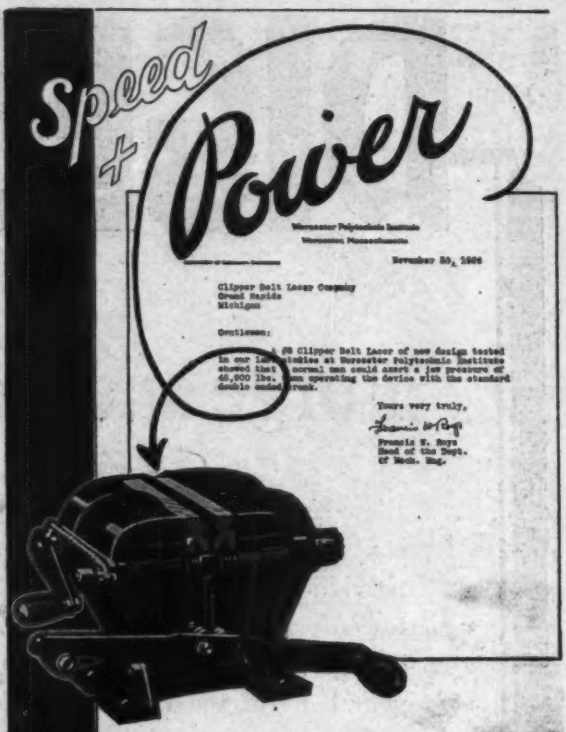
Speed + Power


Worcester Polytechnic Institute
Worcester, Massachusetts
November 30, 1926
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These pumps were installed by the McBurney Stoker & Equipment Company, Atlanta. Lockwood, Greene & Company, Inc., Engineers.

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SEE OUR EXHIBIT AT THE SIXTH NATIONAL EXPOSITION OF POWER & MECH. ENGINEERING, GRAND CENTRAL PALACE, N. Y., DEC. 5 TO 10, 1927.

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Medium—Standard—Extra Heavy
Widths 36" to 164"

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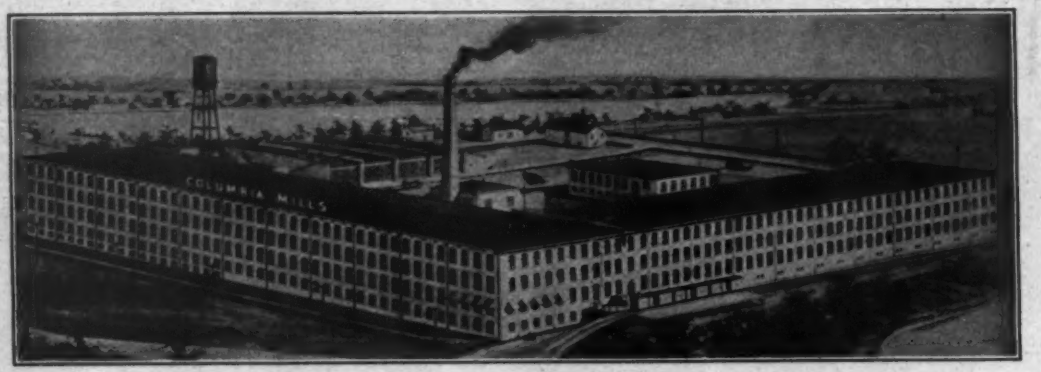
Widths 68" to 210"

Felts within above ranges made in lengths as required



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They DO Satisfy - - - They DON'T Stretch

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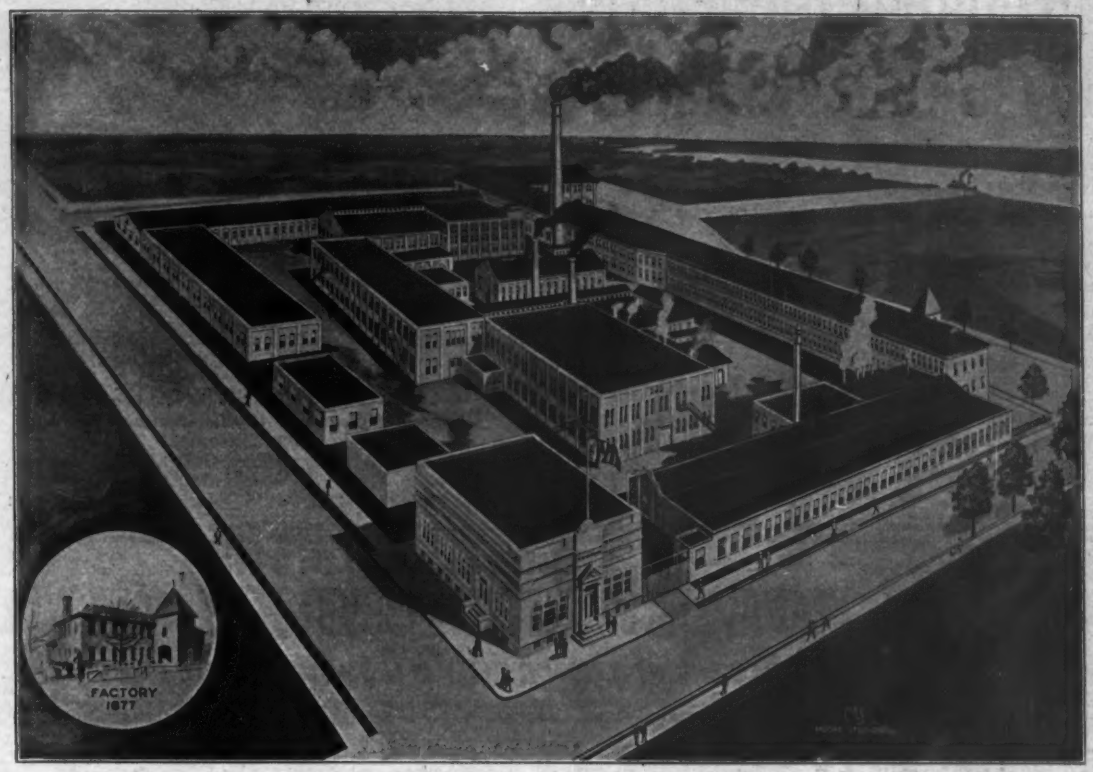

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The improved Biggs rotary cold bleaching engine is daily establishing new records for fast, economical bleaching of high density stock.

Naturally our 40 years' experience in heavy steel plate construction enables us to build sulphate and sulphite digesters of the heaviest type. The Biggs Rotary Boiler Book gives full details. Write for your copy today.

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ROTARY BLEACHING BOILERS
for Years of Dependable Cooking and Bleaching

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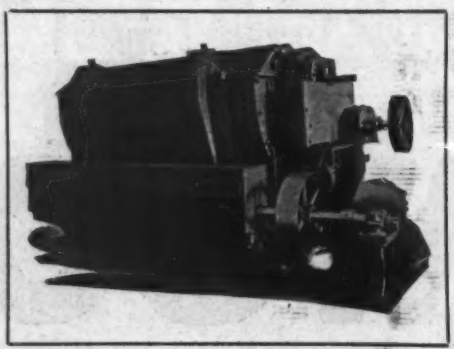

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"Moore & White" Screens produce quality paper whether used on Tissues, Kraft, Roofing Manilas or Book Paper. Lumps and slime spots are eliminated. Breaks on paper are thus prevented and continuous operation is assured.

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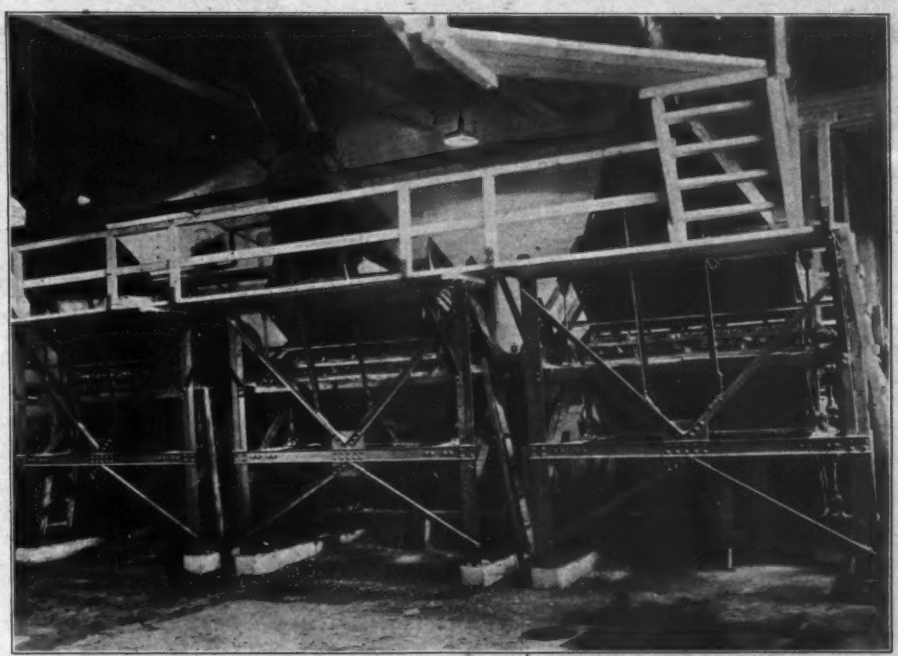
CATALOG ON REQUEST

1927

RYTHER AND PRINGLE COMPANY CARTHAGE N.Y.

RYTHER CHIP SCREEN



Triple Battery Arrangement for Multiple Operation.

Chips from Three Chippers Delivered through Central Elevator and Chutes to Chip Screens.

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DRIVE

WESTINGHOUSE sectional drive adapts itself readily to any operating condition of the paper machine—without loss of time or product.

For inspecting the wire, putting on felts, sewing felts, or spearing paper, any section can be inched as small or as great a distance as may be desired.

The draw can be adjusted easily and the sections will remain at the same relative speeds until again adjusted. A wide range of adjustment is possible—no pulleys to be changed or lagged.

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Speed of the entire machine can be changed quickly to any speed within its range.

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Westinghouse

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OLIVERS

"As good as a Beater"
is what one Mill Manager said of his
OLIVER SAVE-ALL

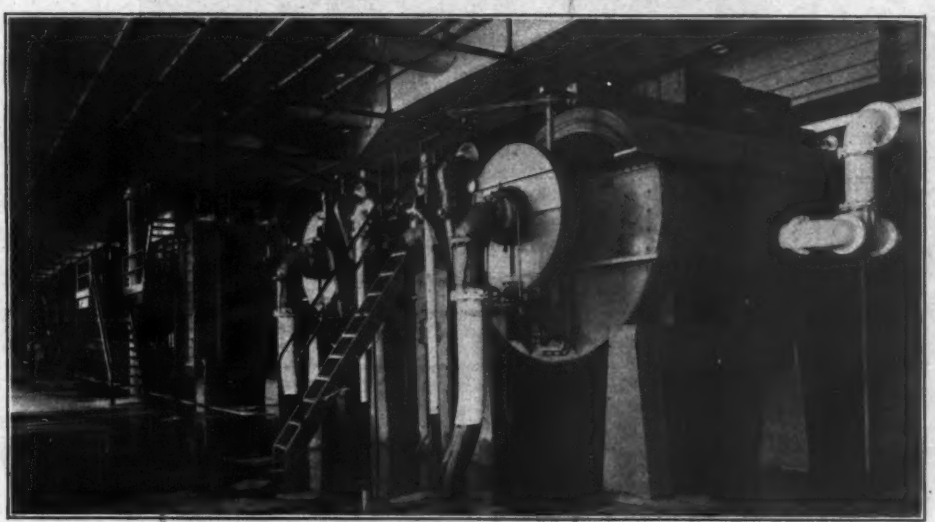

Photo by J. D. Cress, Seattle, Wash.

Oliver Save-Alls in a Pacific Coast Mill

The Oliver returns all the fine fibre and filler to the Paper Machine, giving a closer sheet and better finish.

As a result Beater time is shortened and increased tonnage obtained.

White Water from the OLIVER contains only half pound per thousand gallons.

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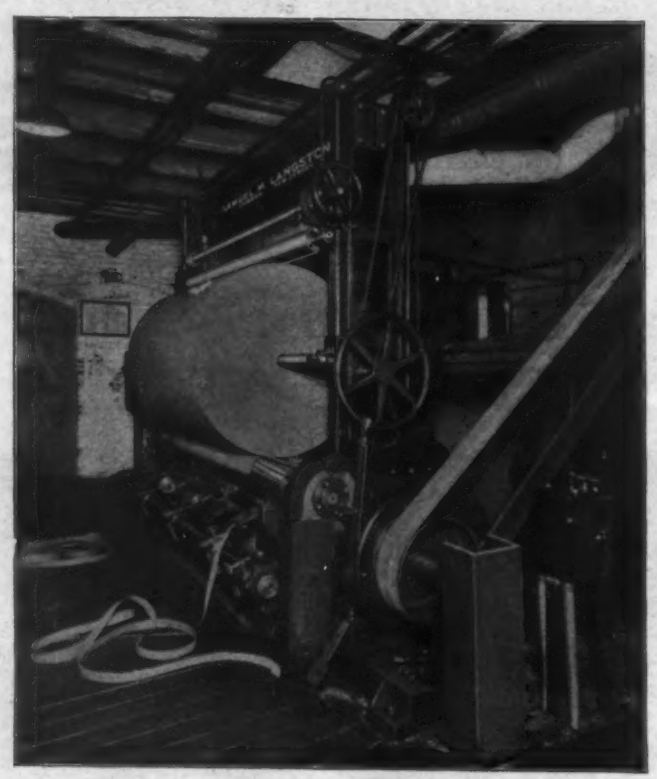

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TO BEGIN with, because of the Langston Shear-Cut.

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For clean-cut, dustless, uniform, easy-to-separate rolls—*better* rolls—the Langston is the Slitter. If you're planning to buy a Slitter let us quote you on a Langston.

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122 to 165 inches and wider.

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SHEAR CUT
CUT

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NATIONAL
ERIE FAST BROWN
GRP

A DIRECT dye characterized by excellent qualities for the coloring of all kinds of paper fibres and very distinctly adapted for blotting papers.

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., Inc.

LESLIE R. PALMER, President — GEO. S. MACDONALD, Vice-President & Treas. — F. E. HOPPIE, Secretary

Executive and Editorial Offices: 10 East 39th Street, New York
Chicago Office: Room 14, Suite 410, 123 West Madison St.

TABLE OF CONTENTS

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Paper Production Increases in August 23
Grays Harbor Pulp Co. Lets Contract 23
Philadelphia Paper Demand Slightly Lower 24
Lively Interest in Brotherhood Election 25
Corner Stone Laid for News Print Mill 26
Pulp Wood Cut Will Be Less 26
U. W. Lehtinen Returns to Finland 27
Noble & Wood Open Portland Office 27
Pulp and Paper Manufacture Leads in Canada 28
Laurentide in $10,000,000 Deal 28
Discourage New Mills 28
Manitoba Gets New Paper Mill 29
C. M. Baker To Work on Stream Purification 29
Coty Machine Co. Busy 29
Paper Demand Expands in Boston 30
American Writing Paper Co. Has Conference 30
Paper Firms To Build Dam at Appleton 32
Northwest Paper Men Meet 32
Paper Demand Expanding in Los Angeles 34
Paper Business Quiet in Chicago 36
Two Hundred Ton Kraft Mill in Sweden 36
Associated Mills Meet at Holyoke 38
Sixteenth Annual Safety Congress Meets 40
Construction News 48
New York Trade Jottings 50
Editorial **52**
Cost Convention at Detroit 53
Technical Section
Air Improves Work of Beater 55
The Moisture Equilibrium of Egg Case Fillers, Flats and Pads 56
Sulphite Pulp from Spruce 58
Current Paper Trade Literature 63
Cost Section **65**
De Luxe Edition by Oxford Paper Co. 69
W. H. Shuart Celebrates 75th Birthday 69
Imports of Paper and Paper Stock 72
New York Market Review **76**
Miscellaneous Markets **78**
Market Quotations **80**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements 85, 86, 87, 88

Eighty

Years of Specialization

1927 marks Dowd's eightieth year in the business of knife-making. These have been eighty years of specialization; the *sole* product of Dowd has been knives and every effort has been directed toward high quality. Today Dowd numbers among its regular customers many of the largest and most discriminating paper mills in America and we believe that this concentration (on specialization) upon *one* product has been the major factor in gaining and holding their patronage. They have found Dowd Knives dependable and of uniform quality year in and year out; they have found that dollars and cents savings is not always a matter of original purchase price, but rather of the efficiency at which knives operate over long periods.

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R. J. DOWD KNIFE WORKS

MAKERS OF BETTER CUTTING KNIVES SINCE 1847

BELOIT, WISCONSIN

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXV, No. 14 — Thursday, October 6, 1927

Pulp and Paper Production Increases In August

Paper Shows Gain of 12 Per Cent During the Month, According to Statistics Compiled by the American Paper and Pulp Association and Affiliated Organizations — All Grades of Wood Pulp, With a Single Exception, Show a Gain of 4 Per Cent During the Same Period

The August production of paper in the United States as reported by identical mills to the American Paper and Pulp Association and cooperating organizations, showed an increase of 12 per cent as compared with the July's production (following a 9 per cent decrease in July over June, according to the Association's Monthly Statistical Summary of Pulp and Paper Industry. All grades showed an increase in production as compared with July.

The Summary is prepared by the American Paper and Pulp Association as the central organization of the paper industry, in cooperation with the Binders Board Manufacturers Association, Converting Paper Mills Association, Cover Paper Association, News Print Service Bureau, Wrapping Paper Manufacturers Service Bureau, Writing Paper Manufacturers Association and Paperboard Industries Association.

The figures for August for same mills as reported in July are:

Grade	Number of Mills	Production Net Tons	Shipments Net Tons	Stocks on Hand End of Month, Net Tons
News Print	71	127,129	124,402	30,335
Book	66	97,611	96,074	54,638
Paperboard	115	216,757	214,730	51,702
Wrapping	67	52,721	51,899	43,939
Bag	23	14,159	13,808	9,477
Fine	74	29,678	28,539	40,159
Tissue	49	14,494	14,452	15,973
Hanging	9	5,339	4,815	1,857
Felts	13	10,564	10,960	2,119
Other Grades	60	23,141	22,756	19,138
Total—All Grades		591,593	582,435	269,337

During the same period, domestic wood pulp production increased 4 per cent, this increase being distributed over all grades, with one exception. The August totals, mills identical with those reporting in July, as reported by the American Paper and Pulp Association, are as follows:

Grade	Number of Mills	Production Net Tons	Used Net Tons	Shipments Net Tons	Stocks on Hand End of Month, Net Tons
Ground Wood Pulp	88	67,136	86,615	2,132	120,606
Sulphite News Grade	38	41,280	39,024	2,782	8,335
Sulphite Bleached	22	23,417	21,792	1,793	2,822
Sulphite Easy Bleached	7	4,086	3,390	272	1,878
Sulphite Mitscherlich	6	6,489	5,916	733	336
Sulphate Pulp	10	17,755	16,332	1,488	3,387
Soda Pulp	11	17,007	12,358	4,201	3,223
Other than Wood Pulp	2	35	.....	.....	146
Total—All Grades		177,205	185,427	13,401	140,733

Harrisville Paper Corp. To Resume Soon

WATERTOWN, N. Y., September 30, 1927.—The remodeling of the plant of the Harrisville Paper Corporation of Harrisville, formerly the Diana Paper Company, will be completed in about two weeks and the machines will be started almost immediately after that.

Although it has not been definitely decided, it is expected that one of the machines will be used for the manufacture of water-finished manila paper and the other for making wall paper.

For the past several weeks, there have been 108 men engaged in the construction work at the Harrisville mill. This work includes the erection of a new steam plant which will use pulverized fuel. New turbines have been installed for driving the machines.

A new ground wood mill has been constructed and in the future all wood will be ground by electric energy at all of the other mills controlled by the St. Regis Paper Company. All stock will be kept in slush form at this mill just as at the other St. Regis mills, this being a great saving in paper making.

New wood conveyors have been erected and other general repairs are being made. The two machines, both of which are products of the Bagley and Sewall Company, of this city, have been repaired and put in shape for the opening.

George Herbert and his family, of Three Rivers, Quebec, have moved to Harrisville and are occupying the house formerly occupied by Frank Johnson, former superintendent for the Diana company. Mr. Herbert is to be chief master mechanic for the Harrisville Paper Company.

Swedish Pulp Market Dull

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1927.—The Swedish wood pulp market has not yet recovered from the summer's dullness. Sales for delivery in 1928 almost wholly consist of so-called conversion sales, that is, new contracts over 1927 and 1928 replacing previous contracts for 1927 only and concluded at a sacrifice in price to sellers. Chemical pulp prices are rather uneven but stabilization at present or slightly higher prices seems likely. There has been no improvement in the ground wood market, according to cabled advices to the Department of Commerce.

Grays Harbor Pulp Co. Lets Contract

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 30, 1927.—Foundation work on the new $3,000,000 mill for the Grays Harbor Pulp and Paper Company, a subsidiary of the Zellerbach Corporation, has been started by Chris Kuppler & Son of Port Angeles, Wash., the forms for the concrete footings now being put in place.

Philadelphia Paper Demand Is Slightly Lower

Curtailment of Consumption Attributed to Warmer Weather and Slackening of Industrial Activities—Local Paper Mills Maintaining Operation in Satisfactory Volume—State Manufacturers Reported To Be on Full Time Basis

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 3, 1927.—Though the mid-September improvement in the Philadelphia trade did not hold to the closing days of the month the local dealers are not convinced that this slump in demand is to be a permanent factor for the early Fall market. The curtailment of orders that marked the last week was in line with the report of the Federal Reserve Bank for the Third or Philadelphia Districts issued with the close of the month and gave an account of slower pace of industrial activities in this territory which corresponded with the survey of the paper trade. It is due to the falling off in general industrial activities that the paper industry experienced this slightly slower markets. Paper dealers report that the continued warmer weather has had much to do with the slackening of demand, as manufacturers are prone to await a more definite assurance of Fall prospects before going ahead with their plans of preparation for the coming winter months.

Federal Reserve Reports on Paper Markets

In its September report on the Quaker City and adjacent territory in the South Jersey district and Eastern Pennsylvania with reference to paper trade conditions the Federal Reserve Bank states that there has been a tapering off in demand with the closing days of the month, following a brisker market with the late August and early part of the current month. Sales in August were decidedly improved over the preceding July but were slightly lower than the same period of 1926. A similar reduction in paper distribution during September of 1927 over that of 1926 was reported in the latest bulletin of the Bank issued during the past week. In a survey of the stocks of papers in the hands of the local dealers the Federal Reserve Bank states that there are slightly larger quantities of paper generally in the warehouses of the distributors. Distributors, however, state that while these reports show lower sales records in the matter of dollars and cents, the discrepancy is really due to the fact that prices for paper were lower but that the volume of shipments held to the levels of last year. They state that margins of profits to the dealers have been small but that this did not affect the manufacturers where quotations were steadily held throughout the dull summer months despite the slower pace of the paper market and its needs of price adjustment to stimulate orders to the mills. Many dealers were well stocked with spring goods and a large portion of these were cleared out during the hot weather to make way for incoming new paper wares as the Fall business was resumed. The cut into values was reflected in the reduced sums of the August and September sales reported to the Federal Bank.

Mills Run Near Capacity

Local paper mills are running near capacity, while many of the State manufacturers are reported to be on full time basis. Those plants producing glassines are operating at capacity and orders are ahead of last year. With the holiday business now anticipated, the demand for glassines in the decorative designs, for food and merchandise wrappings, is an important paper trade factor at this advanced date. The growing popularity of glassine wrappings and its attractiveness as a merchandise display commodity has brought about a remunerative project for the paper trade. Many cigar manufacturers in the Philadelphia territory have this year adopted the glassine wrapper for holiday cigar boxing in the gift giving specialties, using the normal size boxes instead of the customary smaller Christmas boxes and covering these with holiday designed wrappers with greeting imprints. This new idea in gift cigars has created a broad field in the local industry for glassines among the cigar producers and with the extensive cigar factories up State there is added territory for consumption.

Paper board mills are well filled with orders, though there is not the customary advance tonnage usually sold ahead of the market at this season in former years. Most of the production of boards is for shipment to meet the immediate needs of the consumer and not for stocking ahead. Fine paper production is confined to orders already booked among the distributors except in the few plants where wholesale contracts effect a steady pace of operation on year round schedule. Fancy wrapping paper manufacturers are fairly well booked with holiday orders but the standard lines are moving slowly, krafts being the most sought in these coarse grades.

Wholesale Paper Merchants Annual Election

The first annual election of officers for the Philadelphia Wholesale Paper Merchants Association was held last Friday, when the fifteen members met at the Benjamin Franklin Hotel in a luncheon session. Those who were elected to serve during the coming year were: President, Howard Satterthwaite, of the Satterthwaite-Cobaugh Company, and Secretary-Treasurer, George Hooper, of the Hooper Paper and Twine Company. They succeed Frederick S. Balch and E. L. Richards, who were the officials for the past year.

In the absence of former President Balch, Secretary Richards presided and reviewed the activities of the past year. He reported almost 100 per cent enrollment of the wholesale paper merchants of Philadelphia in the association, the first to organize in the industry for the wholesale merchants exclusively. He stated that the Association was remarkable for the harmony and co-operation of the membership and that not a single controversy had occurred or complaint been made of members during the first year of its organization.

Among the achievements in the way of trade advancement in the wholesale paper distribution business which the organization has effected is the Credit Bureau and its handy reference in regard to customers and the co-operative warehousing of association bond papers, where members are able to draw tonnage supplies for their respective patrons with small cost of storage and minimum handling charges. These papers are warehoused in all colors and white with any size and weight available.

In the coming year it is proposed to conduct similar warehousing under the co-operative plans of the association of tonnage supplies of envelopes in the Beco Brand made by the Buffalo Envelope Company of Buffalo, N. Y. Another factor to largely occupy the new year's activities is the new Twine Division for the wholesale merchants, who have been urged to develop this end of the trade as an adjunct to the wholesale paper distribution.

Huff Paper Co. Outing

Indian summer days brought together the band of workers and employers of the Huff Paper Company, with headquarters in the Denckla Building, in an annual outing at Knights Park, Collingswood, N. J., last Saturday. This fifth yearly festival included a program of novelty outdoor stunts, games and spread of good things on the spacious green of the New Jersey resort. While the 45 members of the sales organization, their families and trade associates were entertained by the officers of the company in informal hospitality the staff joined in the numerous diversions,

such as baseball games between the married and single men, obstacle races, running contest, broom polo and like fun provoking sports. During the service of the picnic spread a word of welcome was extended to the staff by President Sherman L. Warren, Secretary Henry H. Huquenele and Treasurer Henry Adler and Assistant Secretary and Treasurer Frank T. Hufnagle of the firm. The many numbers of the sporting program filled in the afternoon entertainment, while the evening was given over to dancing and the award of prizes in the dining hall of the Park to the successful competitors in the outdoor events. Following an evening banquet the homeward trek of autos with the trophy winners leading to the cheers of their fellows brought to a close a memorable day in the annals of the business family of the Huff company.

Fred Hastings At American Writing Paper Conference

Fred Hastings, Philadelphia Manager of the American Writing Paper Company, headquarters in the Bourse Building, attended the sales conference of the eastern district held in Holyoke Mills during the past week. Sales managers and representatives from the eastern states were included in the conferences held in the three days sessions, when outlines for the Fall plans and sales of the Eagle A papers were discussed. The local manager will return to the city in the early part of this week.

Changes in Ajax Mills

With the retirement of Leonard Fitzgerald from the sales organization of the Ajax Paper Mills, of Buck Run, Pa., the Philadelphia trade is covered by George H. Hersom, who during the week made his initial trip to the local distributors as representative of the manufacturers of tissues and like specialties. Mr. Fitzgerald is associated with the City Power and Light Company of Coatesville, the utility corporation now supplying electric power to the Ajax Mills, supplanting the former oil system of operating installed at considerable expense several years ago. Among the new products which the recently appointed representative of the Ajax Mills introduced to the Philadelphia trade upon his first round last week was that of the anti-tarnish tissue for wrapping high grade silver ware such as jewelers supplies and other metals where a protective covering of this type is most valuable in preventing tarnish.

Lang Paper Co. Announces Plant Changes

A special announcement was sent to the Philadelphia trade during the week by the Lang Paper Company, manufacturers of roofing and floor felts and building papers, now located at 24th and Vine streets, informing the distributors of the proposed changes contemplated with the new year. The Lang company stated that the mills will be removed to the newly purchased home formerly occupied by the Pusey and Jones Company as its ship building plant with the first of the new year. The former ship building site is being remodeled to meet the needs of the Lang Mills and when completed the roofing and felt manufacturers will greatly augment production. The spacious grounds and the large plant which will comprise the new mills will give adequate room for the expansion of production with the first days of the coming year, when the company proposes to be settled in its improved quarters. The present site is to be turned over to the city under condemnation proceeds as part of the projected handsome Parkway now being developed by the municipality.

Piqua Straw Board Mills Improved

As the innovation in the mills of the Piqua Strawboard Company is near completion the Philadelphia representative of the manufacturers, J. F. Chism, is planning a trip to the manufacturers headquarters in Piqua and Tippecanoe City, Ohio, in the coming month to make a round of the plants and survey of improvements. The plants have been equipped with new Badenhausen boilers, coal crushers and conveyors of fuel. The new coal crushers will be used to pulverize the anthracite so as to eliminate smoke and ashes, improve the board production, and provide for economy in drying facilities. With the improvements the manufacturers of straw boards, pulp lined and combination boards, and cap stock for can manufacturers, such as are produced in the Piqua mills and paper can stock and like boards made in the Tippecanoe mills, will be able to give speedier service to its distributors and consumers, as well as extend its production. The new coal crushing system is similar to that used by large steel mills or in stone breakers, where pulverizing is effected.

European Paper Trade Travelers Return

Paper trade associates who have spent the summer in the sight seeing places of Europe are now returning to their desks in the various houses with which they are affiliated. Among the returned members of the Quaker City trade are F. W. Coar, Secretary of the Paper Manufacturers Company, and his co-worker, W. H. Bernau, who have been abroad for three months or more, the latter having visited his birthplace in Wisebaden, Germany, after making a tour of Europe. Both visited the Scandinavian and Germany paper mills for which the Paper Manufacturers Company is local distributor.

Another trade association who just has returned from overseas is Miss Catherine A. Wood, popular member of the staff of the Paper House of Pennsylvania, who has been proclaimed one of the best informed women in the industry on paper generally. She again occupies her desk after ten weeks tour of Ireland, France, Italy and Switzerland.

Lively Interest in Brotherhood Election

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., October 1, 1927.—One of the bitterest campaigns in the history of the International Brotherhood of Papermakers ended this week with both William R. Smith, present head of the union and candidate for re-election, and Matthew J. Burns, his opponent, predicting their election. The voting period starts today and continues until October 15 and the votes of all local unions in the United States and Canada are expected to reach headquarters in this city shortly after the 15th. The board of canvassers will convene in Albany on October 20 and the result of the election will be announced as soon as the board completes its work.

The last week of the campaign was featured by a bitter attack on the policies of Mr. Smith as president of the Brotherhood. This originated with the Troy local and thousands of pamphlets were distributed during the past few days in papermaking towns in the United States and Canada. The pamphlet takes exception to many of President Smith's statements and declares that the membership of the papermaker's union has decreased rather than increased, the loss amounting to approximately five hundred since Mr. Smith assumed office.

President Smith is also charged by supporters of Mr. Burns with having injected politics into the recent Northern New York conference at Norwood contrary to union policies. It is asserted that this meeting was called for the purpose of discussing matters pertaining to the union and the locals of Northern New York and it is claimed that the advocacy of Mr. Smith's candidacy at this meeting was already bringing a reaction.

In a pre-election statement Mr. Burns said:

"Through a practice of the past we have all but destroyed self confidence in the majority of our locals. They have been obliged to submerge all local interests and initiative to conform with the viewpoints of centralized authority. Today we find only a few locals ready and willing to assume responsibility in the matter of self government. This can be corrected by allowing local units greater freedom of action within the meaning of the law."

He also devoted considerable space to the question of union jurisdiction and advocated extension of union jurisdiction in the paper mills rather than to confine it solely to the machine room. President Smith on the other hand advocates the limitation of union membership to skilled papermakers only.

Corner Stone Laid for News Print Paper Mill

Premier Ferguson Welcomes Spruce Falls Power & Paper Co. Enterprise to Kapuskasing and Ontario—Plant to Have Daily Capacity of 550 Tons of News Print and 230 Tons Sulphite Pulp—To Be Completed by Next July

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 3, 1927.—There took place at Kapuskasing, Ont., last week, an interesting and outstanding function when the Hon. G. Howard Ferguson, Premier of Ontario, laid the corner stone of the new news print plant of the Spruce Falls Power and Paper Company. The event marked the consummation of plans long in evidence for the development of that section of the province and was witnessed by a large gathering.

Mr. Ferguson extended a welcome to the United States interests in furthering the industrial expansion of Ontario in the pulp and paper industry and declared that the policy of the provincial government was to develop the forest wealth along permanent lines. Of an entire expenditure of some $25,000,000 in the enterprises at Kapuskasing and Smoky Falls, Ont., Mr. Ferguson pointed out that the company behind the gigantic projects were expending all except about ten per cent in Canadian products.

In the evening, the Premier of Ontario, along with noted representatives of the paper company, the *New York Times,* and the Kimberly-Clark interests, was entertained to a banquet. F. J. Sensenbrenner, president of the Spruce Falls Power and Paper Company, said that the new mill at Kapuskasing would be completed by July of next year. He described the work as the biggest industrial undertaking that has ever been erected at one time in the history of Ontario. Eventually the industry would have a pay roll of $2,500,000 annually.

Dr. John H. Finley, editor of the *New York Times,* also made an interesting and impressive address. Referring especially to the industry he asserted that if it were possible to put a water-mark on every roll of paper produced in Canada, the words "Made-in-Canada" would be found daily in practically every home in the United States. Concerning Premier Ferguson he paid a high tribute and stated that if they had him in the United States he would be among the most promising candidates for the Presidency.

View Magnitude of Project

A special train, consisting of the private cars of Premier Ferguson and George Lee, chairman of the Temiskaming and Northern Ontario Railway, brought the party from Toronto to Smoky Falls. A reception was held there by the Morrow & Beatty, Ltd., Construction Company. The party was received by Mr. Beatty in an assembly hall, where an orchestra concert was held and the premier said a few words to the gathering.

A tour was made of this enormous work which will develop 75,000 horse power. A concrete dam is being constructed 1,700 feet long across the Mattagami River with a maximum height of 100 feet, and an earth dam 2,000 feet in length. There will be four units 18,750 horse power each and a head development of 1,400 feet.

It was necessary to build a railroad fifty miles long, passing through the timber limits of the Spruce Falls Company between Kapuskasing and Smoky Falls, carrying two aluminum circuits for transmission at 110,000 volts.

Altogether 1,800 men are employed on the various constructions of this enterprise. The material used includes 18,500 cubic yards of concrete, 16,000,000 pounds of structural steel, 3,500,000 pounds of reinforcing steel, 10,000,000 square feet of timber and an equal amount of lumber.

It was necessary to excavate 130,000 cubic yards of rock and 1,000,000 cubic yards of earth. This water-power development is the most northerly in Ontario and is 100 miles south of James Bay.

When completed and in operation, the mill will have a capacity of 550 tons of news print daily, and the pulp mill a capacity of 230 tons of sulphite daily.

I. W. Killam Buys Toronto Paper

I. W. Killam, Montreal financier, who is widely known in connection with pulp and paper interests and is president of the Royal Securities Corporation, has purchased the *Mail and Empire,* Toronto, the consideration being $2,500,000. It is understood that Mr. Killam will remove to Toronto. It is reported that the present building of the *Mail and Empire,* which is one of the oldest and most influential newspapers in Canada, will be torn down and a twenty story structure erected on the site. It will be remembered that some time ago Mr. Killam bought the plant and assets of the Mattagami Pulp and Paper Company, Smooth Rock Falls, Ont., and later sold his interests to the Abitibi Power and Paper Company. He also financed the Riordon Company and sold what was left of it to the Canadian International Paper Company.

What is claimed as the outstanding success of Mr. Killam's career is the recuperation of the Royal Securities Corporation (of which, as already stated, he is the president) from the disastrous effects of the collapse in 1921 and 1922 of the Riordon Pulp and Paper Company, whose bonds the Royal Securities Corporation floated. There were many who were prepared to chalk up the Ottawa Valley enterprise as a failure against Mr. Killam but his friends maintained that his judgment in backing up the development has been amply vindicated by the fact that the Riordon enterprises were bought later by the International Paper Company and have progressed so far as to be capitalized probably more highly than Mr. Killam ever dreamed. John Scott, late managing editor of the *Montreal Gazette,* has been selected by Mr. Killam to conduct the *Mail and Empire* and has already arrived in Toronto.

Wax Paper Industry's Position

A charge has been made that the Canadian wax paper manufacturers have combined to extort exorbitant prices from the trade. E. Newell, president of Dominion Envelope and Carton Company, Toronto, resents the allegation and declares that in 1926 not a wax paper company made a nickel, and his own organization lost from 10 to 15 per cent on the business in that product. The whole trouble has arisen through one of the Canadian brewing companies making applicatoin to the Tariff Board at Ottawa to have a reduction effected in the customs duty on wax paper. Mr. Newell added that the applicants had no reason of their own for presenting such a demand.

A reduction of 15 per cent has been asked, and if it is granted, Mr. Newell declares it would practically close up every wax paper company in Canada. "We are," he went on, "one of the biggest manufacturers and have been in the business for two years. Each year has shown a loss in the wax paper line."

Mr. Newell stated that if they sold wax paper somewhat cheaper in the United States, it was because they could buy their light paper and the paper used at cheaper prices there. The manufacturer did not become any better off in Canada by charging slightly more. Even in the United States they were losing on it, said Mr. Newell. The paper mills here, he pointed out, can't specialize on wax paper, hence a greater comparative cost.

Pulp Wood Cut Will Be Less

Word received from the Sudbury district of Ontario states that the cut of pulp wood and lumber in that area will be considerably

less than it was last season. It is understood the pulp companies have contracted for 1928 for only half the output they did in 1927. The depletion of timber resources has caused a settling down of some lumber firms while failure to obtain a profit on the year's operations has forced others to abandon the business.

Estimates of the output in the territory under the control of the Sudbury office of the Crown Lands are placed at about 80,000,000 feet,—a decrease of 10,000,000 feet from 1926-27. In the same area pulpwood operations are expected to be reduced approximately 50,000 cords or only half the amount of last season. This is explained by overproduction of pulp on a falling market which resulted in the curtailment of output of the various mills in that line during the past few months.

A number of lumber concerns are turning their attention more and more to pulp wood. Austin & Nicholson, of Chapleau, Ont., have a contract for supplying 20,000 cords. Several pulp wood camps of the Spanish River Pulp and Paper Company and Plaunt & White are located near Gogama, on Mileage 74 and on Onaping Lake.

New Company Gets Charter

Stone Straw Corporation of Canada Limited, Toronto, was recently incorporated with a capital stock of $100,000, to carry on the business of manufacturers and dealers in straw and paper, cardboard and other preparations, and to manufacture the same into boxes, bags, packages, books, etc.; also to make and deal in lumber, boxes, barrels, cases, etc. Among the incorporators are—F. G. Bush and H. W. Jackson, both of Montreal.

Paper Box Outlook Good

The quarterly meeting of the Toronto Carton Council was held recently at the new Hotel London in London and there was a large gathering of paper box manufacturers from several parts of the province. Every one present expressed himself as to general trade conditions and the general opinion was that, while competition is keen, business is improving and the outlook is good for fall. Attention was called to the tendency on the part of buyers for large concerns to try on each succeeding order to get the price reduced. The paper box manufacturers were advised in the face of such tendency to preserve a firm stand in the maintenance of prices.

Notes and Jottings of the Industry

R. I. Finlay, president of the United Paper Mills, Toronto, spent last week on a visit to his old home in Holyoke, Mass., and while there attended the gathering at the Chemical Paper Manufacturing Company.

The Howard Smith Paper Mills have added a blue white shade to the Krypton line which does not replace the regular shade of white but is an addition to the line made in both parchment and linen laid.

John Taylor, sales manager of the E. B. Eddy Company, Hull, Que., was in Toronto recently calling on the trade.

H. G. Finlay, vice president of the United Paper Mills, Toronto, and Mrs. Finlay, have returned from a holiday motor trip to Buffalo, Cleveland, Detroit and other points.

By supplementary letters patent the Mississaga River Improvement Company, Limited, has increased its capital stock from the sum of $40,000 to $150,000, by the creation of 1100 shares of $100 each. The powers and objects of the company have been extended to towing, driving, transmitting and otherwise conveying timber and products of the forest over and along the Mississaga River and all its tributaries, including the White River and its tributaries, in the district of Algoma.

Noble & Wood Open Portland Office

PORTLAND, Ore., September 30, 1927.—The Noble & Wood Machine Company, Hoosick Falls, New York, will open a headquarters in Portland, to serve the Pacific Coast territory, with Daniel Arpin as district manager.

U. W. Lehtinen Returns To Finland

The Finnish government has recently had a capable research representative at the U. S. Forest Products Laboratory in the person of Uno. W. Lehtinen, who completed a three-years' sojourn in the United States with a visit of six months at the Forest Products Laboratory, left recently for Finland to resume his official duties. His studies in the United States, and at the laboratory in particular, were planned to fit him for effective participation in the new government program of forest products research being inaugurated in his native country.

Mr. Lehtinen came to the United States in 1924 on leave from his regular work to study at his own expense the forestry and forest products research methods of the United States. After having been in this country for about two years he was awarded a fellowship provided by a Finnish government educational fund. About five such fellowships are given by that government each year to enable properly qualified scientists, educators, engineers, and artists of Finland to carry on approved studies in other countries.

Mr. Lehtinen received his professional forestry training at the University of Helsingfors. In the civil war that followed the collapse of Russian Control, in 1917, he saw hard fighting. After the final success of his party, the Whites, Mr. Lehtinen spent some additional time in the national military academy and the army, where he was promoted to the command of a field artillery battery.

On his arrival in the United States in December, 1924, Mr. Lehtinen went directly to the Pacific Northwest. By the fall of 1925 he had gained sufficient mastery of English to enable him to enroll for the scholastic year 1925-26 in the forest school of Yale University. On leaving Yale he visited, during the summer and fall of 1926, the paper mills and sawmills of Ontario and Quebec. The winter of 1926 Mr. Lehtinen spent on lumber market studies in New York City, from which city he went this spring to Syracuse University to get the benefit of studies and consultation on the utilization of forest materials. From Syracuse he went direct to the Forest Products Laboratory, where he has familiarized himself with the methods of research on wood and wood products developed in that institution.

Before coming to this country Mr. Lehtinen was in charge of a number of mill-scale studies in a unit of the Finnish national forests. Finland, according to Mr. Lehtinen, has only recently inaugurated research work in forest products. Early next year it is expected that a special department for forest products research will be established in the Forest Research Institute at Helsingfors. This national institution was established in the first year of Finnish independence, 1917, and at present is engaged principally in valuation and silvicultural studies and in studies of the bog forests which cover a considerable part of Finland.

Among the things which Mr. Lehtinen has found noteworthy in this country is the absence of forest insurance, a policy which is common in Finland and the other Scandinavian countries to the extent that 50 per cent of Finnish and Scandinavian farmers carry insurance on their wooded lands. Of the various regional fire prevention activities carried on in this country, the Finnish forester was especially impressed by the fire protection work in Pennsylvania, Minnesota, and California, which he describes as equalling or surpassing similar activities in Finland and Scandinavia.

Frank E. Floyd Honored by Masons

INDIANAPOLIS, Ind., October 3, 1927.—Frank E. Floyd, president of the Crescent Paper Company of Indianapolis, has been named one of five Indiana men as a nominee to receive the honorary thirty-third degree of the Scottish Rite in Boston. For several years he has been active in committee and ritualistic work in the Scottish Rite and at the present time holds the office of junior warden in Adoniram Grand Lodge of Perfection in Indianapolis.

Pulp and Paper Manufacture Leads in Canada

Official Report of Forest Products Branch Just Issued Shows Industry Most Important in Net and Gross Production and Value of Wage and Salary Distribution—News Print Paper Output Makes Up Biggest Percentage of Reported Tonnage

MONTREAL, Que., October 3, 1927.—That the pulp and paper industry is the most important manufacturing industry in Canada with regard to net and gross production as well as total value of wage and salary distribution is the announcement made by the Forest Products Branch of the Dominion Bureau of Statistics in a report just issued for the calendar year 1926.

This report states that the total value of pulp wood produced in Canada's forests for the year shows an increase of 9.5 per cent. The total value of pulp manufactured increased by 14.9 per cent and the total value of paper produced increased by 12.6 per cent. If the three forms of industrial activity covered by this report are considered as one then the net total value of production for the industry as a whole might be considered as the sum of the pulp wood exported, pulp exported and paper manufactured. This total for 1926 was $224,539,271, an increase of 10.7 per cent over the figure for 1925. These totals for the last five years are as follows: 1922, $158,483,377; 1923, $188,642,109; 1924, 187,174,703; 1925, $202,781,017; 1926, $224,539,271. The maximum which was reached in 1920, owing to the high prices prevailing at that time, was followed by a decided decrease in 1921 but 1922 and 1923 showed increases. There was a slight decrease in 1924 due to a decrease in pulp manufacture but there were increases in all branches of the industry in 1925 and 1926. The figure for 1926 is the highest in the history of the industry.

If only the manufacturing aspect of the industry is to be considered, the value of production should be considered as the sum of the values of pulp made for sale in Canada, pulp made for export and paper manufactured, excluding pulp wood and the pulp made in the combined pulp and paper mills for their own use in making paper. This total for 1926 was $215,488,315 as compared to $193,092,937 for 1925, an increase of 11.6 per cent. The gross value of the manufactured products of the industry in the last five years are as follows: 1922, $155,785,388; 1923, $184,414,675; 1924, $179,259,504; 1925, $193,092,937; 1926, $215,488,315.

Mills in Operation

There were 115 mills in operation in Canada in 1926 as compared to 114 in 1925. Of these mills 44 made pulp only, 36 were combined pulp and paper mills and 35 made paper only. During the year one pulp mill began the production of paper, one paper mill ceased operating, one idle paper mill resumed operations and one new paper mill began operations. The 80 mills manufacturing pulp produced 3,229,791 tons valued at $115,154,199 as compared to 2,772,507 tons in 1925 valued at $100,216,383 representing an increase of 16.5 per cent in quantity and 14.9 per cent in value. Of the total for 1926 the combined pulp and paper mills produced 2,031,994 tons valued at $58,061,003 for their own use in papermaking, 135,819 tons valued at $6,622,255 were made for sale in Canada and 1,061,978 tons valued at $50,470,941 were made for export.

The 71 mills making paper in 1926 produced 2,266,143 tons of paper valued at $158,395,119 as compared to 1,884,705 tons in 1925 valued at $140,680,177 an increase of 20.2 per cent in quantity and 12.6 per cent in value.

News Print Paper Tonnage

News print paper made up 83.3 per cent of the total reported tonnage of paper manufactured in 1926. The news print amounted to 1,889,208 tons valued at $121,182,987, as compared to 1,536,523 tons in 1925 valued at $106,268,641, an increase of 23 per cent in tonnage and 14 per cent in total value. Under the heading of news print in Canada are included news print in rolls and sheets for printing, hangings and poster paper. The reported news print production in the United States during the calendar year 1926 was 1,686,695 tons, but this figure does not include hangings or poster paper. When these two classes are deducted from the production in Canada during the calendar year 1926 the figure for comparison is 1,882,384 tons, showing that the Canadian production of this commodity has increased until it is almost two hundred thousand tons greater than that of the United States.

The total capital invested in the manufacturing part of the industry in 1926 was $501,184,714 as compared to $460,397,772 in 1925, an increase of 8.9 per cent. Only capital invested in mills operating in 1926 is included in this total.

The total number of employees on salaries and wages in pulp and paper mills in 1926 was 29,880 and the total pay roll was $44,175,502 as compared to 28,031 employees in 1925 with salaries and wages amounting to $38,560,905.

Laurentide in $10,000,000 Deal

According to the *Ottawa Citizen*, negotiations in a $10,000,000 deal are reported on "most reliable information" to be in progress, involving the purchase by the Laurentide Company of the W. C. Edwards Pulp and Lumber Company, of Ottawa; the Hawkesbury Lumber Company, of Hawkesbury, Ont.; and the Pembroke Lumber Company, of Pembroke, Ont. The holdings of the three district companies consist of large areas of timber limits on the Ottawa river which include perhaps the most extensive lumbering operations on the American continent. The *Citizen* says that, in financial circles, the proposed deal is a move to combat the continued expansion in the Ottawa Valley of the Canadian International Paper Company.

Bathurst Co. To Double Output

From St. John, N. B., it is announced that the plant of the Bathurst Company, Ltd., which now turns out 50 tons of news print daily, will be doubled by next spring. It is announced that another paper machine has been ordered and it is expected that the work of installation will be carried on during the winter.

The company has carried on operations at Bathurst for twenty years and provides employment for some 500 hands in its pulp and paper mill and saw mill. In addition to this it has hundreds of men engaged in cutting operations in the woods during the proper seasons. Most of the sulphite pulp, of which the plant's capacity is some 45 tons per day, is exported to the United States.

The doubling of the capacity of this plant will, therefore, be a matter of much moment to industrial New Brunswick and yet a further epoch in the progress of the pulp and paper making industries in the Maritimes.

Discouraging New Mills

The policy of the Quebec Government in discouraging the establishment of new pulp and paper mills in Quebec will be put into effect with the leasing within the next few weeks of several thousand square miles of forest land. The limits, therefore, will be offered only to pulp and paper mills already in existence. This policy, it is held, will benefit both the pulp wood operators and the public. The public will be safeguarded through the protection of their forests and by the protection of their huge investment in the Canadian pulp and paper industry. The industry itself will also benefit. No encouragement will be given to the erection of new mills which would only serve to endanger the operations of the present needs by further augmenting the supply of pulp and

paper; a supply which even now exceeds the demand. It is further stated that the conditions of lease assure that the amount of pulp wood taken off the limits will not be greater than annual increment of the forests. Thus the provincial government is endeavoring to provide a perpetual yield from its forest lands.

Manitoba Gets New Paper Mill

With the floating of the $125,000 bond issue of the Great West Paper Mills Company, a new industry goes to Manitoba. It is estimated that the West consumes 25,000 tons of paper materials annually, and that by manufacturing in the Province transportation charges on much of this, which run as high as $35 per ton, will be saved.

The new company, under the presidency of J. Charles Wood, through their agents, Ellison & Co., will total an issue of first mortgage, 7 per cent sinking fund gold bonds. The whole issue will amount to $125,000 in $1,000, $500 and $100 bonds.

Plans and specifications of the proposed mill have been appraised by John H. Anderson, chief engineer of Canadian Ford Motor Company, and placed at $250,000.

Pulp Situation Unsatisfactory in Norway

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 5, 1927.—The consensus of opinion still seems to be that mechanical pulp prices now current in Norway are causing the mills to operate at a loss, according to a report from R. Dunker, American Consulate General at Oslo, which further observes that the curtailment in production so far has not contributed to improve prices. The chemical pulp market is also unsatisfactory. Prices are low, and 20 per cent of the year's output of bleached sulphite remains unsold. Considerable quantities of easy bleaching and strong sulphite are also on hand. Even with the wage reductions that have taken place the mills are reported to be running at a loss.

The finer grades of paper have been in fair demand, with somewhat weakening prices, however. There is a good demand for kraft at satisfactory prices. Cap and tissue papers have not enjoyed a good market, owing to conditions in the Far East. News print prices are low.

C. M. Baker to Work on Stream Purification Problem

On November 1, C. M. Baker, who for eight years has been State Sanitary Engineer with the Wisconsin State Board of Health, will take up work on the stream purification problem of the paper industry under the direction of the American Paper and Pulp Association and its National Committee on Stream Purification.

Mr. Baker was born in Ithaca, N. Y., in 1882, but until entering Cornell University in 1904, lived in the Dakotas and Montana. Upon graduation from Cornell in 1908, with degree in civil engineering, Mr. Baker practiced sanitary engineering in North Dakota for three years and in 1914 went back to Cornell as an instructor in civil engineering. During the three years there he completed his work for degree of Master of Civil Engineering. From 1914 to 1918 he was assistant sanitary engineer with the New York State Board of Health. His work in New York had to do with the supervision and control of public water supplies, waste disposal, sewage treatment, etc.

During the World War, Mr. Baker was an assistant sanitary engineer with the United States Public Health Service, engaging in sanitary work at several of the army camps. During the summer of 1919 he organized the Bureau of Sanitary Engineering of the Tennessee State Board of Health and on September 1, 1919, accepted the position of State Sanitary Engineer with the Wisconsin State Board of Health. During his eight years with the Wisconsin State Board of Health, the State Bureau of Sanitary Engineering was completely reorganized and throughout this time special attention was given to the problem of waste disposal and stream purification in the state. A very complete report on these activities is contained in a bulletin by Mr. Baker, entitled "Stream Pollution in Wisconsin," a publication of some 325 pages. Particular consideration has been given to the handling of paper mill waste in this bulletin.

The problem which the association has faced in finding a man of the right training and experience has been a difficult one and has caused delay in the beginning of this very important work in the industry. The question has come up repeatedly in the work of the National Stream Purification Committee as to the type of an engineer who should be employed to attack the waste and pollution problem in the industry. The association is confident that a man of Mr. Baker's training and experience is the best possible type of an engineer to work with the industry.

It is expected that there will be a meeting of the National Committee on Stream Purification, in Chicago, in November, at which time the program for Mr. Baker's work for the first year will be laid out. The committee believes it would be advisable to have Engineer Baker cooperate as effectively as possible with committees representing the industry, which are now working on a very satisfactory basis in such states as Pennsylvania and Wisconsin, and also to make the work which is done in the industry through a trained engineer harmonize as closely as possible with the work of the state agencies concerned with this question in the various states in which pulp and paper mills are located. Mr. Baker's work will be focused on the states in which the issue of conservation of waste is a live one.

C. M. BAKER

Mr. Baker's engineering service in the industry should prove of great value as a clearing house of information for every pulp and paper mill concerned with saving of waste and should be the best possible demonstration that the industry is determined to do for itself what it needs to have done.

Coty Machine Co. Busy

ALBANY, N. Y., October 1, 1927.—The Coty Machine Company, of Watertown, builders and designers of paper bag machinery, has just completed a rotary bottomer and automatic tube feeder unit for Thomas R. Phillips, of Akron, Ohio. The unit is being assembled and will be shipped this week for installation in the Akron plant. The Coty Company is reported to have orders on hand for several more of these machines. In the building of the rotary bottomer and automatic tube feeder units considerable of the machine work is done under contract by the Watertown Engine and Machine Company. The bottomer was originated and patented by the Coty Machine Company.

Paper Demand Continues to Expand in Boston

Market Sustains Improvement and Future Prospects Are Generally Favorable—Manufacturers of Box Board Well Booked Ahead With Orders—Paper Stock Situation Rather Spotty Old Rope and Bagging Prices Somewhat Firmer

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 3, 1927.—Favorable prospects for the paper business continue in a market which has sustained improvement. The price of ledgers and bond remain firm, as well as book and kraft. A great many "inquiries and estimates" are coming in, some from concerns not heard from for a long time. The box board business is active. Manufacturers in New York and Philadelphia are apparently well booked ahead with orders. The box makers seem to be encouraged. Business in this commodity has been steady in 1927, compared with the fluctuations of 1926. Wholesalers of box board are receiving more inquiries now on the new prices, although many mills are covered for requirements as far as possible at the old prices.

In paper stock, prices generally continue the same, although old kraft is now quotable at 2.00 to 2.20, compared with 2.05 to 2.25, and overissue news at .70 to .80, compared with a previous flat price of .80. One of the dealers in paper stock, bagging, domesic rags and foreign rags, states that conditions today seem to point gradually toward pre-war prices, holding that there is very little chance for advance. Consumers insist on "buying down" in order to stimulate trade. In the paper stock lines this condition leads up to the survival of the fittest. There are a few inquiries on certain grades of paper stock here and there for immediate consumption, and mills are not committing themselves to any great extent for future deliveries beyond thirty to sixty days. Waste paper is weaker in mixed paper, news, and book stock.

In gunny bagging the tendency is towards higher prices. Foreign gunny bagging No. 1 is now quotable at 1.75 to 2.00, compared with a previous price of 1.75 and domestic gunny bagging No. 1 is quotable at the same figures, compared with 1.50 to 1.60. Foreign Manila rope and strings are quotable at 3.75 flat, compared with a previous range of 3.50 to 3.75. The domestic is quotable at 4.00 to 4.12½, compared with 4.25 to 4.37½. Scrap burlaps are at 1.65 to 1.75, compared with 1.50 to 1.75; heavy wool tares at 1.75, tending higher, compared with 1.40 to 1.60; new burlap cuttings at 3.25 to 3.37½, compared with 2.15 to 2.25.

In new domestic rags, a few changes have taken place with a decline noted. Blue overalls are quotable at .05 to .05½, compared with .07; khaki cuttings at .04½ to .05, compared with .05 to .05½, and canvas at .08 to .09, compared with .09 to .10.

In old domestic rags, repacked thirds and blues are quotable at 2.00 to 2.12½, compared with 2.12½ to 2.37½. Roofing stock generally is somewhat higher, with the No. 1 grade moving at 1.65 to 1.75, compared with 1.45 to 1.55, No. 2 at 1.50 to 1.62½, compared with 1.33 to 1.43, and No. 3 at 1.00, compared with .96. No. 4, however, shows a slightly easier tendency, and is quotable at 1.00 to 1.10, compared with the previous price of 1.10.

Price List Sizes

Newton C. Brainard, of the Case, Lockwood and Brainard Company, Hartford, Conn., has writen a letter to A. V. Howland, of Tileston and Hollingsworth, published in the September "How," in regard to the different sizes in price lists of paper manufacturers, concerning which a letter was printed in the August number. Mr. Brainard states that his house attempts to keep for reference a complete file, not only of price lists, but of all standard grades of paper, including everything that is water marked and all cover papers which come in. After many experiments it was found that a vertical letter file was the only feasible way of keeping them, but that they were faced with the impossibility of providing for all the sizes in which samples were sent out. They range from an envelope stuffer to a poster, and even the sample books show equal variation. They finally made it a rule to throw away any samples which would not go into an ordinary letter folder.

An article in the September issue of 'How," under the caption of 'Minimizing a Printing Vexation," discusses the effect of temperature variation on a two-colored job, and the lessening of the difficulties by using precaution in ordering paper. The effect of moisture on paper, either in expansion or shrinkage—and the latter is more troublesome in the case of printing two colors—has been a difficult problem to solve and one that every paper maker is trying to overcome.

News of the Trade

Edward E. Lanagan, for many years identified with the paper trade of Boston, has recently joined the sales organization of the Charles A. Esty Paper Company. He will be located at their Boston store, 125 Pearl street, which specializes in the sale of high-grade papers, exclusively. This company, besides being a Linweave agent, acts as distributor for Crane & Co., Strathmore, Reading, L. L. Brown, and Louis Dejonge. They also have a store in Worcester and a Springfield sales office.

The Esty Paper Company has been appointed exclusive agent in Boston for Strathmore Cockatoo, a new colorful line of Strathmore paper in five colors, two weights and two finishes. Sample books of this line have been mailed to the trade. A service stock is carried in Boston.

The Esty Paper Company have put in stock at their Boston warehouse a full line of Dejonge's Art Gloss, made by Louis Dejonge Company, manufacturers of High Grade Coated Book. This is the first time that Art Gloss has been carried in this city, although Dejonge's Deco Enamel and Dejonge's Art Mat have previously been stocked here.

Several of the Boston merchants have returned from the meeting of the Crocker-McElwain Company, and the American Writing Paper Company at Holyoke, Mass.

John Carter & Co., Inc., have become general distributors for the Journal Linen Ledger, made by the Millers Falls (Mass.) Paper Company.

N. H. Carpenter, general manager of the Coshocton (Ohio) Straw Paper Company, was in town last week calling on the trade.

American Writing Paper Co. Has Conference

HOLYOKE, Mass., October 4, 1927.—The annual conference of the salesmen and service men of the American Writing Paper Company was held Thursday and Friday of last week at the Hotel Nonotuck, about 250 attending. The opening address was by President Sidney L. Willson who reviewed the history of the company until its present excellent condition was reached. There were conferences in various topics followed by an informal dinner at night at the big ball room of the hotel. Further conference followed on Friday and at noon the golf lovers were guests at the Mt. Tom Golf club, golf events being in charge of W. J. Norton.

The women attending were given a trip to Sweetheart Inn on Mohawk trail and visits paid to Smith College and the home of President Calvin Coolidge in Northampton. At night they were given a dinner at the Hotel Kimball in Springfield followed by a theater party.

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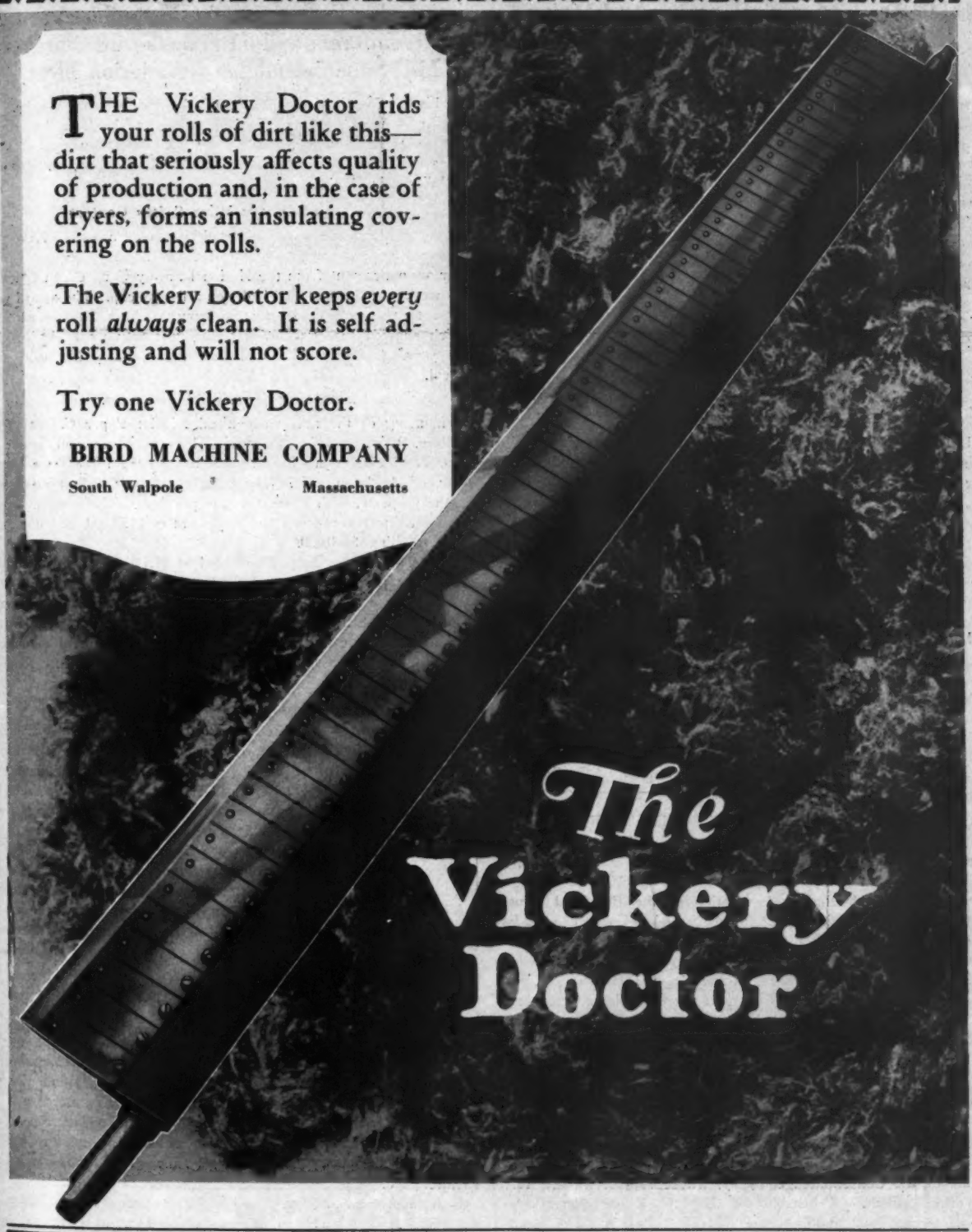

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Paper Concerns to Build Dam at Appleton

Middle Dam, One of the Oldest and Most Important on the Fox River, To Be Replaced at Cost of $100,000—News Print Service Bureau, Cost Accountants and Engineers and Northwest Division of the American Pulp and Paper Mill Superintendents Association Meet

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 1, 1927.—One of the oldest and most important dams on the Fox River will be replaced at once with a new one costing $100,000, according to announcement this week. It is the one known as the "middle dam" at Appleton, where it has served the paper industry since the earliest days.

The water power is owned by the Fox River Paper Company, Patten Paper Company, Ltd., Appleton Machine Company, Valley Iron Works, and Appleton Manufacturing Company. There were fears for several years that ice would carry away the dam and its replacement therefore is planned at once so it can be completed within three or four months.

Sixteen sluices each twenty feet wide will be provided when the new dam is built. These will assist the local navigation officials of the United States government to regulate the flow of water during times of high level. The contract has been let to C. R. Meyer & Sons Company.

Litigation which gained national prominence is associated with this project. The owners contested the necessity of submitting to the newly enacted state recapture clause, which enables the state to acquire all new water power projects at the end of thirty years. The case was carried to the Supreme Court of the United States and was lost. This was the occasion on which Moses Hooper of Oshkosh, water power attorney 92 years old, argued the paper mill case in Washington.

Northwest Paper Men Meet

More than one hundred representatives of paper mills and paper supply houses were present at the annual fall meeting last weekend of the News Print Service Bureau, Cost Accountants and Engineers, and the Northwest Division of the Superintendents Association at Wisconsin Rapids, Wis. Aside from inspection of the mills of the Consolidated Water Power and Paper Company, and the Nekoosa-Edwards Paper Company, and special dinners, the time was devoted to discussion of technical subjects, with a valuable interchange of ideas.

On the opening day, E. E. Bartels, auditor of the Munising Paper Company, spoke on budgetary control methods used by his company. J. H. Slater, manager of the Escanaba Paper Company, spoke on loading and shipping costs, and W. G. MacNaughton, secretary of the Technical Association of the Pulp and Paper Industry, on "Technical Control of Sulphite Cooking and Its Relation to Costs." After a dinner as guests of the Consolidated company, the delegates heard talks by Arnold Pfau, of the Allis-Chalmers Company, Milwaukee, on water power development, and by W. F. Thiele and Ernest Belter, of the Consolidated company, on the new boiler plant installed recently at their mill. A welcome was extended by George W. Mead, mayor of Wisconsin Rapids, and president of the Consolidated company.

Quite a number of subjects were taken up at the sessions on Saturday of last week. "Technical Control in Pulp and Paper Mill" was discussed by Allen Abrams, of the Marathon Paper Mills Company, and "Stock Regulators" by R. W. Haddock, of the Escanaba Paper Company. Another speaker was Walter L. Mead, of the Consolidated company, whose subject was "Safety and Employment." Other subjects were: "White Water Systems," C. E. Youngchild, of the Nekoosa-Edwards Paper Company; "Protection of Steel in Paper Industry," R. McCall, Detroit Graphite Company; "History of Nepco Lake Water Supply," J. E. Alexander, of the Nekoosa company, and "High Speed News Machines," by C. E. Macklem, of the Beloit Iron Works. A chicken chowder luncheon was held at noon at the J. E. Alexander cottage on Nepco Lake, and a banquet Saturday evening at Port Edwards. The banquet speaker was B. R. Goggins, an attorney of Wisconsin Rapids.

Nekoosa-Edwards Wins Safety Contest

Considerable pride was manifested by employees of the Nekoosa-Edwards Paper Company, of Port Edwards and Nekoosa, Wis., over announcement from the National Safety Congress in Chicago this week that the company had won a trophy cup. The award was given to the paper company employing more than 500 persons which showed the greatest progress in safety work during the last year. This is the second time the company has won this award.

Financing the Nicolet Paper Co.

Financing of the newly organized Nicolet Paper Company, of DePere, Wis., will be accomplished through a bond issue of $300,000 which has just been issued through the First Trust Company, of Appleton, Wis. The issue constitutes a first mortgage on the property, with interest at 5½ per cent. The company also has issued preferred stock to the amount of $150,000, and common stock totalling $500,000.

Assets of the company are valued at $1,110,007.21 for the mill and water power rights, and $200,000 of working capital. The power value is fixed at approximately $300,000. William C. Wing, president of the Fox River Paper Company, Appleton, is president also of the new company, and H. C. Hanke is general manager. The mill has two machines in operation on glassine and greaseproof papers.

Control of Water Power

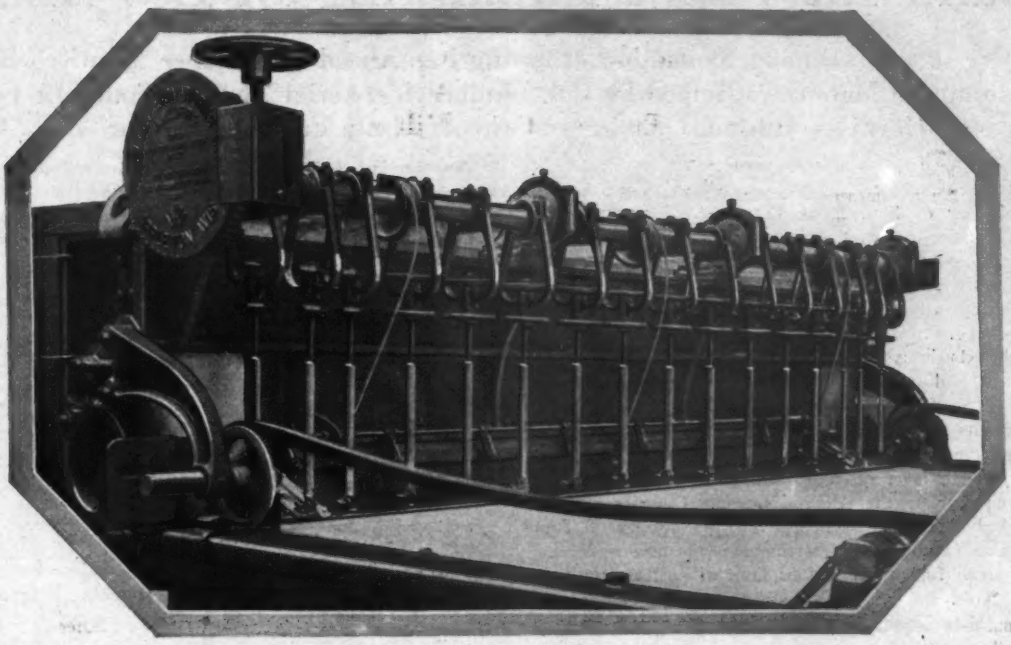
Further attempts for state control of water power in Wisconsin are being made by the legislature. An interim committee is making an inspection tour of all water power sites and existing dams in the state to learn the extent of this resource and its uses. It is said the data are being gathered with the idea of introducing at the next session of the legislature a resolution to amend the constitution so the state will have power to acquire private dams and operate them. Paper mill interests have been placed at a disadvantage already because of the "recapture" clause in the water power law giving the state the right to acquire all new water power sites at the end of thirty years. Manufacturers are expected to wage a strong fight against further adverse legislation.

For Commissioner for Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 5, 1927.—Appearing last week before the Director of the Budget in connection with appropriations for the fiscal year beginning July 1, 1928, Dr. Julius Klein, director of the Bureau of Forest and Domestic Commerce asked for an appropriation for a Trade Commissioner for Europe for the paper trade. This is the project in which Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association, has been so interested.

It is understood that Dr. Baker and a Committee, which has not yet been named, will also appear before General Lord in this connection on October 11 at which time they will back up the sentiments of Dr. Klein in connection with this Trade Commissioner.



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Warren Manufacturing Company
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Hammermill Paper Company
Menasha Printing & Carton Company
Northern Paper Mills
Nekoosa-Edwards Paper Company
Detroit Sulphite Pulp & Paper Company
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Demand for Paper Expanding in Los Angeles

Business Transacted During September Running Far Ahead of Summer Months—Increased Consumption Materially Helped by Col. Lindbergh's Aerial Tour of Southern California—Autumn Opening of Schools Also a Favorable Factor

[FROM OUR REGULAR CORRESPONDENT]

LOS ANGELES, Cal., September 28, 1927.—During Colonel Lindbergh's aerial tour of Southern California local paper dealers enjoyed a fine business from the thousands of dodgers, placards, and special advertising mediums being circulated at the time. This fact, coupled with the opening of all public schools and colleges, will aid materially in making September an outstanding month in paper trade circles. Several of the leading paper companies reported that their business already this month exceeds that of the Summer months, and anticipate that a fine balance can be checked up for profit by the first of October.

Local merchants took advantage of the intrepid aviator's visit by displaying huge placards along the line of march, and small boys fairly spread a layer of dodgers and handbills in front of the aerial conqueror of the Atlantic Ocean. One small paper company worked night and day in order to fill the eleventh-hour orders, put on an extra crew to accommodate the new trade, and cleaned up a small fortune in various lines of posters and huge Lindbergh placards.

Miss Nancy Tompkins Honored

Miss Nancy Baker Tompkins, of the Zellerbach Paper Company, was recently honored by being made a member of the Advisory Committee of the Manufacturers' Exhibit of Southern California, which is located in the Southwest Building, 130 South Broadway, Los Angeles. Her work on this committee has already produced results, as she was instrumental in arranging a splendid program for September 29, when open house will be held. Foreign paper trade will be discussed at a round-table meeting. Miss Tompkins also assisted the management in their policy of encouraging the promotion of aviation in California. Miss Tompkins is not only an excellent judge of paper trade conditions, but she is also very capable in the distribution of paper products.

Union Paper Supply Co. Going Strong

The Union Paper Supply Company, located on South Los Angeles street, Los Angeles, reports a very fine business in paper supplies. This organization has grown steadily within the past few years until today it is one of the leading paper supply concerns in Los Angeles. President B. S. Fujioka, one of the original organizers of the corporation, recently made an extensive tour through the Orient. While there he visited Japan, China, Manchuria, Korea and other leading trade centers. During his six months' trip he combined business with pleasure, carefully investigated paper trade conditions in the Orient, and brought back a fund of information which will prove invaluable in this company's future foreign paper trade. This firm specializes in high grade paper products, distributed both in this country and abroad.

Kelly Returns From Northwest

J. A. Kelly, sales manager of the Sierra Paper Company, Los Angeles, has recently returned from a vacation trip through the northwest. He visited the larger cities and many of the leading paper companies, and returned with considerable information on the paper trade in the northwestern metropolises. He also announced that Thomas A. O'Keefe, formerly assistant manager of the Sierra Paper Company, left recently to accept the position of manager of sales merchandising for the Pacific Coast Paper Company, San Francisco.

Mr. O'Keefe was one of the best known paper men in Los Angeles, and while he will be greatly missed, Mr. Kelly asserted, this new position offers such vast opportunities for a man of his caliber that all his friends were pleased to hear of the change. Before leaving, a large banquet was tendered Mr. O'Keefe by the employees of the Sierra Paper Company, and it was voted a gala affair by all those in attendance. As a token of their esteem, the employees presented Mr. O'Keefe with a solid gold watch of latest design, and beautifully engraved with his initials.

Mr. Kelly also reported that their business for August was greatly in excess of July's business, and that from present indications, September will be far better from a sales standpoint than August. During the summer months, paper buying assumed the form of many small orders, whereas present purchases are much larger in volume with a decided increase in number. The Sierra Paper Company is one of the many paper concerns that profited by reason of Colonel Lindbergh's visit, and the fall opening of public schools has also added considerably to their output of fine paper.

Dennison on Brief Vacation

T. M. Dennison, manager of the fine paper department of Blake, Moffitt and Towne Paper Company, is taking a brief vacation. Business has been so excellent for this company that he is compelled to take his vacation in relays. This concern does a large volume of business in fine paper, which fact forces Mr. Dennison to be constantly in touch with his department.

Mr. Erlandson, of the same department, has been on a business trip to San Francisco, and while there he will not only transact business for his company but will study the paper trade situation in the Bay City metropolis.

El Rey Products in Demand

Increased distribution throughout the Pacific Coast region by the Los Angeles Paper Manufacturing Company has produced a steadily growing demand for their asphalt roofing products, according to an announcement made recently by N. L. Brinker, director of sales. Production facilities have been greatly improved in order to cover all orders and also to take care of an ample reserve of stock.

"It is really surprising how popular our slate-surfaced hexagon shingles have become," Mr. Brinker asserted. "While we have had no let-up in orders for our asphalt-felt roofing, the demand for shingles has increased steadily until we are now concentrating on shingle production four days a week. New business is coming in from the Orient and increased orders are being shipped on almost every freighter leaving Los Angeles Harbor, to the Hawaiian Islands and other transpacific points.

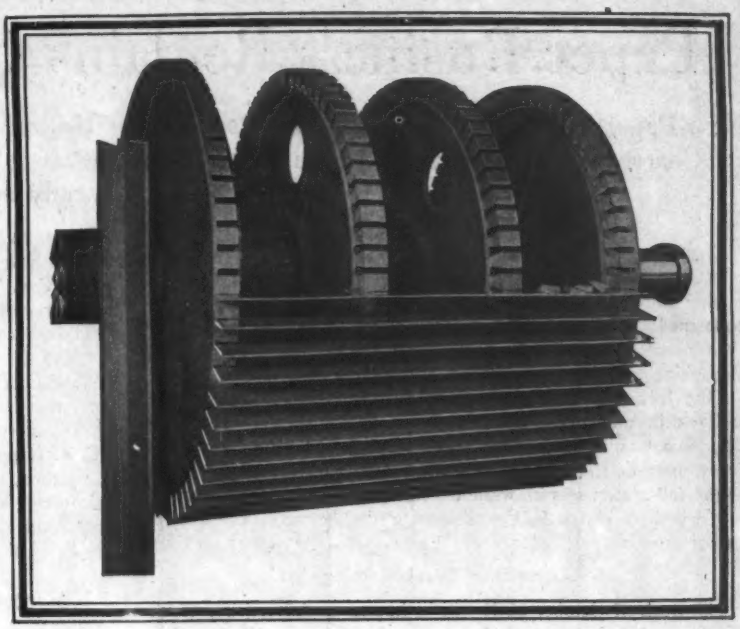
"The Pacific-Northwest is showing a marked interest in El Rey products as indicated by the increase in orders and inquiries from that section, and with building in the local territory showing steady gains, our domestic orders for both roofing and shingles have kept every department of our plant at full production speed for several months, with no indication of a let-up for many months to come.

"Naturally we are highly pleased with the results we are getting, and we are convinced that quality manufacture is the secret of our success. Having established ourselves over a period of more than 25 years in the manufacture of good building felts and other standard products from rag and paper base, we entered the roofing field with valuable experience and a going plant."

Mr. Brinker recently left for a motor tour of the Northwest. He will do considerable fishing, he announced, but his chief objective is to study paper trade conditions in that district and confer with this company's representatives in the principal cities of Washington, Idaho, Oregon and northern California.

Partial list of users:

American Asphalt Roof Corporation
American Tar Products Company
Analomink Paper Company
Ancram Paper Mills
Arrowhead Mills Inc. (46)
Backus Brooks Co.
Ball brothers Company
Barrett Companies (11)
Beaver Board Companies (19)
Beckman Dawson Co. (9)
Bloomer Brothers Company (9)
Bird & Son (17)
Bogalusa Paper Company (12)
Brownville Board Company
Carthage Paperboard Company
Phillip Carey Company (44)
Certainteed Corporation (40)
Champion Coated Paper Company (22)
J. G. Cherry Company
Chicago Coated Board Company
Cia Industria Papeis e Cartonagen
Consolidated Paper Company (71)
Container Corp. of America
Coshocton Strawboard Co.
Cropper & Company (11)
Defiance Paper Company
Dixon Board Mills (8)
Downington Paper Company
Draycott Mills, Inc. (10)
Dunn Sulphite Paper Company
Eddy Paper Company (16)
Endicott Johnson Co.
Federal Paperboard Company
Field & White Co.
Flintkote Company (10)
Fort Orange Paper Co.
Foster Box Board Co.
Fox Paper Co. (9)
Colin Gardner Paper Co. (9)
P. H. Glatfelter Co.
Robert Gair Co.
Grays Harbor Pulp Co.
Halltown Paper Board Co.
Hanna Paper Corp.
Hoboken Paper Mills
Indiana Board of Filler Co.
Lafayette Box Board Co.
John Lang Paper Co. (16)
La Salle Paper Co.
Lawless Bros. Paper Co.
Lewis, Slocum & Le Fevre
Lockport Paper Co. (9)
Logan-Long Co.
Mac Sim Bar Paper Co.
Marion Paper Co.
McEwan Bros. (9)
R. B. McEwan & Son
Mengel Box Co.
Midvale Paper Board Co., Inc.
Mid West Box Co.
Minnesota & Ontario Paper Co.
Mobile Paper Mills
Monroe Paper Products Co. (9)
Morris Paper Mills
Moyer & Pratt
Mutual Box Board Co.
National Biscuit Co.
Natick Box & Board Co.
National Paper Products Co. (8)
B. F. Nelson Co.
Newark Box Board Co.
New Castle Paper Mills
North Star Strawboard Mills
Ohio Box Board Co. (11)
Ohio Paper Co.
Orenda Corp.
Oswego Falls Corp.
Paper Board Corporation (10)
Paraffine Cos. (16)
Pioneer Paper Co. (10)
Provincial Paper Mills, Ltd.
Rainier Pulp & Paper Co.
Raybestos Co.
Richardson Co. (9)
Sall Mountain Co.
San Rafael Paper Co. (8)
Saranac Pulp & Paper Co.
Schmidt & Ault Paper Co.
Frank Smith Paper Co. (8)
Howard Smith Paper Co.
John Strange Paper Co.
Thames Paper Co.
Taggert Bros.
Union Mills Paper Mfg. Co.
Three Rivers Paper Co.
United States Gypsum Co. (11).
Upson Co.
Valve Bag Co.
Victoria Paper Co.
Wakana Paper Co.
West Jersey Paper Mfg. Co.



Upwards of 800 Dilts Bandless Rolls Are in Use Today

Placed end to end these 800 rolls would make a line two and a quarter (2¼) miles in length.

They would weigh about eight million (8,000,000) pounds.

They would have a total fly bar surface of over two and a half million (2,500,000) inches.

It would require the life time of five mechanics (taking their average working hours) to build these 800 rolls.

Revolving at standard speed the surfaces of these 800 rolls would travel over four hundred thousand (400,000) miles per day,—over one hundred twenty million (120,000,000) miles per year.

In operation, and averaging 1,000 lbs. of stock per hour, they would turn out over ten thousand (10,000) tons per day,—over three million (3,000,000) tons per year.

Lasting on an average of three times as long as other rolls without re-filling, the saving to the mills is beyond calculation. Cost of filling, loss of time through idle beaters, damage from accident and breakage,—all this is reduced to the very minimum through the use of these 800 Dilts Bandless Beater Rolls.

Beater rolls are a vital part of the equipment of your mill, because,

—*"Your paper is made in your beaters."*

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

Paper Business Remains Quiet in Chicago

Fine Paper Houses Anticipate Sharp Demand for Holiday Lines in Near Future—Request for Coarse Papers Beginning to Improve With Arrival of Autumn Season—Prices of the Various Grades Continue Steady and Unchanged

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 1, 1927.—Rain, and plenty of it, had its effect on the Chicago paper houses and the latter part of September found conditions rather quiet as far as actual business is concerned. Here and there a paper house is meeting with more than usual success in the sale of certain lines but, in general, everything is quiet.

That July and August were slow months in the paper trade as well as in other lines of business is past history. September opened not quite so favorably as last year, according to reports from some of the leading houses. Coarse papers are improving as the fall season sets in, while the fine paper houses are expecting a sharp demand for holiday lines, etc., in the very near future. Prices remain firm and are not likely to change for some time

Advertising Week Coming

The week of October 16-21 will be known as Advertising Week in Chicago. It is expected that more advertising men will gather in the city that week than have ever been assembled in one city at any previous time. A feature of the week will be a huge Advertising Exposition conducted under the auspices of the Chicago Advertising Council collaborating with the International Direct Mail Advertising Association. The event will be held in the huge exhibit hall of the Stevens Hotel and will comprise over 170 exhibits. The displays will include practically everything in the advertising plan, including agencies, advertising service organizations, printers, publishers, lithographers, engravers, electrotypers, direct mail list and letter companies, paper houses and producers of equipment of various sorts applicable to advertising. The Chicago paper industry is represented on the Executive Committee personnel by Noble Gillette, of the Chicago Paper Company.

National Fall Meeting Plans

While all this excitement relative to various conventions of interest to the paper trade in general is going on, N. A. Schoenbrucker, secretary of the Wrapping Paper Division of the National Paper Trade Association is laying plans for the program of the Fine Paper Division and the Wrapping Paper Division at the Fall Meeting, to be held at the Congress Hotel in October. The program of this meeting has been carried in full in a previous issue of the PAPER TRADE JOURNAL. The only change in the program since that time is in the meeting of the Central Carton Packing Committee of the Fine Paper Division, which will be held at 11 a. m. Monday, October 24, instead of 10 a. m.

Western Paper Men May Meet

Arrangements are under way to schedule a meeting of the Western Paper Merchants Association to be held at the Congress, October 25, in conjunction with the Fall Meeting. The local association is affiliated with the national organization and it is felt that both bodies would benefit if the time of the two meetings would concur.

Miscellaneous Trade Notes

N. A. Schoenbrucker, assistant secretary of the National Paper Trade Association, has just returned from a trip east where he attended the regular quarterly meeting of the Virginia-Carolina Paper Trade Association, held at Winston-Salem. A number of Chicago paper men have attended various meetings of paper manufacturers in the East during the past month or two.

The Salesmen's Association of the Paper Industry, under the leadership of Jim Coy, president, and Walter Cox, vice-president, continues to hold its regular Monday meetings. Of late all discussions have been relative to the coming Fall Meeting, according to Mr. Coy.

It is reported in Chicago that the change from the ream to the 1,000 sheet count was adopted last month along the Pacific Coast and that the new method was meeting with favor in that locality.

W. E. Dwight, president of the Dwight Brothers Paper Company, together with Mrs. Dwight, has just returned from a delightful three weeks' motor trip through the Eastern States.

C. K. Higgins, formerly secretaary of the National Paper Trade Association, and now in charge of western sales of the American Reinforced Paper Company, has been in New York on business during the past week. He has not returned to Chicago but is staying in the East for an indefinite period.

Ernest E. Whiting Made Resident Manager

OSWEGO, N. Y., October 1, 1927.—Ernest E. Whitney has been made resident manager and director of the Carlisle industries in Oswego, according to announcement made this week by Charles E. Norris, vice president of F. L. Carlisle & Co., which controls a large chain of paper mills in Northern New York. Mr. Whitney is a director of both the Taggart-Oswego Paper and Bag Corporation and the Oswego Board Corporation, and will have supervision over these two companies as well as other Carlisle properties in Oswego as personal representative of F. L. Carlisle & Co. He has been in charge of building the new plants now under construction for the Taggart-Oswego Paper and Bag Corporation and the Oswego Board Corporation and will continue to direct the building operations. The new appointment makes him the directing head of these companies.

Mr. Whitney has been a resident of Oswego for more than two years and has been active in civic and industrial affairs. He is vice president and general manager of the Oswego Industries Corporation which early this year purchased more than two hundred acres of land to be used for the development of new industries. It is on this plot of ground that the new plants are being constructed for the Oswego Board Corporation and the Taggart-Oswego Paper and Bag Corporation.

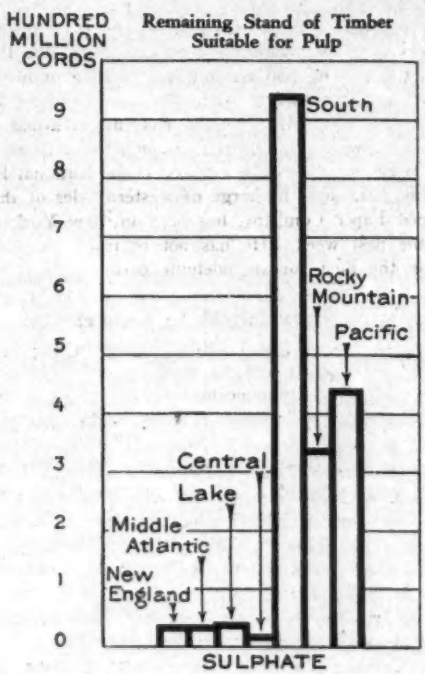
New Two Hundred Ton Kraft Mill in Sweden

Marma Sagverks Aktiebolag (Marma Pulp Company) of Soderhamn, Sweden, has let contracts for the construction of the largest sulphate pulp mill in Scandinavia. This new mill will have a capacity of 200 tons of pulp per day and will follow the latest developments in pulp mill practice.

The sulphate process found favor in Sweden, Norway and Finland immediately following its introduction at Danzig, Poland, by C. F. Dahl in 1884, whereas it was not introduced on this side until 1907 at East Angus, Quebec. The developments in the process since then have been so important that early this year Marma sent its chief engineer, K. S. Moe, to the United States and Canada to study the latest methods. Certain modern methods successfully used in North America have accordingly been adopted on the basis of Mr. Moe's investigations.

Continuous processing will be used in the recausticizing of green liquor and the subsequent handling of the lime mud. Continuous cauticizers, lime slakers, and thickeners are being supplied by the European associates of the Dorr Company of New York and continuous vacuum filters for dewatering lime mud will be furnished by the Oliver Continuous Filter Company.

Forty Billion Board Feet Of Pine Timber For Paper Industry In MISSISSIPPI



Favorable factors In Mississippi—

Pulp Wood

40,000,000,000 board feet of pine timber available at from $5.00 to $7.00 a cord.

Salt Cake

Three convenient ports, Gulfport, New Orleans and Mobile, bring incoming shipments to Mississippi forests.

Coal and Lime

Coal and lime just next door — in Alabama fields, available at reasonable freight rates.

Labor

Labor is plentiful and, due to lower living costs, works for less wages than paid in other sections with a net return which is advantageous to it.

Power

Low-priced electric power abundant through all sections of the state.

Says The "Southern Lumberman":

> "Even a cursory survey makes it evident that the essential raw material for paper must continue to be wood. . . . .
>
> Under such conditions the future growth of the industry must necessarily take place in those regions in which pulp-wood can be grown in short rotation with a high rate of growth."

That means that the future growth of the paper industry must necessarily take place in the South, because the South is the region where pulp-wood can be grown in shortest rotation with the highest rate of growth!

Mississippi now has the second largest stand of pine in the United States, and pine is the leading wood used in the sulphate process — in the making of Kraft paper.

Add to this inexhaustible supply of raw materials in Mississippi the factors listed here—location, transportation, labor, power, sites, climate, — and you see at a glance, that Mississippi is the ideal for location for your Southern paper mill. Write our

NEW INDUSTRIES DIVISION

MISSISSIPPI POWER CO.

GULFPORT, MISS.

MISSISSIPPI POWER COMPANY

Associated Mills Hold Conference at Holyoke

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 28, 1927.—It was a noteworthy gathering of paper merchants at the Fifth Annual Mill and Merchants Conference of the Associate Mills, the Crocker-McElwain Company and the Chemical Manufacturing Company, Monday and Tuesday at the Hotel Nanotuck. These annual conferences bring together at round-the-table discussions the heads of the mills and the paper merchant distributors for the purpose of obtaining the various viewpoints for mutual benefit.

Prominent Paper Dealers Present

That something of real value is derived from these gatherings is best exemplified by the large attendance of prominent men in the industry, many of whom came from extreme points of the continent. The attendance this year broke all records for past conferences.

An important feature of these conferences and one, the value of which is becoming more generally recognized at business men's gatherings, is the prompt manner in which the sessions are started and the close attention given to the scheduled program.

C. A. Crocker Makes Opening Address

In his opening address on Monday morning, Clifton A. Crocker, president of the Associate Companies, expressed gratification at the large attendance. "Our aim," he said, "is to make the best paper possible for the money, even at the sacrifice of a legitimate profit. In fact American paper manufacturers have not been able to make a legitimate profit since the war. We must maintain the standard of our product and do extra work to make the standard higher." He also mentioned the improvements being made in the plant of the Chemical Manufacturing Company, where a new filtering system is being installed.

New Line Discussed

At the conclusion of Mr. Crocker's address, Charles H. Barr, merchandising counselor for the two mills, addressed the opening session, discussing the new lines which are being introduced and outlining the advertising campaign which has been planned in pushing the sales.

E. C. Tucker, vice president of the companies and manager of production, followed Mr. Barr and analyzed some of the problems which today confront the mill man in turning out his product. With the close of the session for general discussions, departmental meetings were held Monday afternoon and Tuesday morning, these being the Bantam Manifold and Index Bristol meeting with Walter E. Perry as chairman, which was addressed by Edson S. Dunbar, advertising manager, followed by a general discussion on "Agency Relations."

The Certificate Bond meeting was in charge of J. E. Holmes, chairman. Reports were read by K. S. Warner, of the advisory committee, which were followed by general discussions on certificate bond envelopes and converted lines.

The Tuesday morning sessions were in charge of Gordon Blanchard, sales manager of the Associate Mills, and Lee H. Hulet, the former being chairman of the Economy Ledger and Buyers Ledger meeting and the latter of the meetings on Cover Papers. The banquet on Monday evening, surrounded by an atmosphere of hospitality, which is always characteristic of its hosts, was a most enjoyable affair.

Address by Rev. J. G. Gilkey

The only address of the evening was given by Rev. J. G. Gilkey, of Springfield, Mass., who in his usual optimistic style contrasted present day home life with that of past generations and left all with the thought that the conditions today were really no different from those of grandfather's time. His final injunction was that "today we have more to fear from the wealth of the people than from their poverty."

Indicating the cordial relations existing among paper manufacturers of the Connecticut Valley was the large attendance of the representative heads of mills making lines competitive of the Associate Mills products.

Among Those Present

Among those present at the two days' sessions were:

Geo. D. Allen, Knight, Allen & Clark, Inc., Boston, Mass.; Harry M. Alling, Arnold-Roberts Company, New Haven, Conn.

Leonidas Beck, Chas. Beck Company, Philadelphia, Pa.; E. W. Brainard, Brainard Paper Company, New York City; H. S. Brown, Carter, Rice & Company, Boston, Mass.; Neill S. Brown, General Paper and Cordage Company, Pittsburgh, Pa.; Lee Buchanan, Chope-Stevens Paper Company, Detroit, Mich.

A. E. Crowell, Carter, Rice & Company, Boston, Mass.; G. G. Custer, W. F. Nackie Paper Company, Milwaukee, Wis.

A. C. Damon, Paul E. Vernon & Company, New York City; H. F. Donahue, Molten Paper Company, Philadelphia, Pa.

J. C. Ely, Buyers Paper Company, Dayton, Ohio; C. A. Esty C. A. Esty Paper Company, Worcester, Mass.

R. I. Finlay, United Paper Mills, Toronto, Ont.; E. C. Fuller, Vernon Bros. & Company, New York City.

L. R. N. Gardner, R. L. Greene Paper Company, Providence; S. G. Garner, J. E. Linde Paper Company, Newark, N. J.

A. C. Hall, John Carter & Company, Boston, Mass.; Oscar Hakes, W. H. Smith Paper Corporation, Albany, N. Y.; W. H. Holden, Geo. W. Millar & Company, New York City; J. B. Jones, Western Newspaper Union, Omaha, Neb.; B. A. Judd, Petrequin Paper Company, Cleveland, Ohio; W. J. Johnson, Quimby-Kain Paper Company, Grand Rapids, Mich.; P. M. Judd, Judd Paper Company, Holyoke, Mass.

R. M. Keogh, Buyers Paper Company, Dayton, Ohio; Alfred Kinn, J. E. Linde Paper Company, New York City.

Spencer Lathrop, Lathrop Paper Company, New York City; Thomas Lathrop, Lathrop Paper Company, New York City; B. E. Linde, J. E. Linde Paper Company, New York City.

Allan Munro, National City Paper Corporation, New York City; Frank Miller, Chope-Stevens Paper Company, Detroit, Mich.; George McKinney, F. A. Flinn, Inc., New York City; J. C. Mallalieu, Geo. W. Millar & Company, New York City; W. E. McNaught, Globe Paper Company, Boston, Mass.; F. E. Miller, Central Ohio Paper Company, Columbus, Ohio; W. F. McLellan, Carter, Rice & Company, Boston, Mass.; R. E. Myers, R. M. Myers & Co., Rochester, N. Y.; Bryant McQuillan, Storrs & Bement Company, Boston, Mass.; H. H. Meyer, National Paper and Type Company, New York City; W. N. Meek, Meek & Whitney, Inc., Springfield, Mass.

A. L. Oman, Paper Supply Company, Minneapolis, Minn.

A. W. Pohlman, A. W. Pohlman Paper Company, New York City; L. D. Post, *The Paper Mill*, New York City; E. L. Potter, Potter-Taylor Paper Corp., Albany, N. Y.; A. H. Phillips, Troy Paper Company, Troy, N. Y.

P. K. Roth, Urquhart Paper Company, New York City; W. H. Rourke, Rourke-Eno Paper Company, Hartford, Conn.; H. H. Rutter, Globe Paper Company, Boston, Mass.

A. H. Seyler, Cleveland Paper Company, Cleveland, Ohio; Brad Stevens, Brad Stevens Company, Boston, Mass.; H. Z. Schniewind, National City Paper Corporation, New York City; L. Schuman, Manhattan Cord and Paper Company, New York City; H. Schuman, Manhattan Cord and Paper Company, New York City; L. A. Smith, Field-Hamilton-Smith Company, Omaha, Neb.; C. Raymond Smith, Van Reed Paper Company, Reading, Pa.; Wm. Steadman, J. E. Linde Paper Company, New York City; W. B.

(*Continued on page 76*)

EMERSON MFG. CO.

Resumes Operation in New Up-to-date Plant

THE new Emerson Plant has been completed and production is now under way in the most modern and efficient factory that skilled engineering could design. A complete equipment of the heaviest modern machinery makes it possible to handle your work expeditiously and economically.

All drawings, data and patterns were saved from the fire which destroyed the old plant. In consequence you can be promptly supplied with any replacement or repair parts for Emerson Paper Mill Equipment previously installed.

Under present advantageous conditions you are assured a more valuable service than ever before in Emerson history.

While manufacturing an extensive line of paper mill machinery which fully meets the requirements of all classes of paper production, your especial attention is called to our Heavy Duty Beater Rolls and Refiner Plugs.

Emerson Beaters and Refiners are designed and constructed to stand up under the most exacting conditions. They cannot be surpassed in their ability to take punishment. The Emerson reputation has been built on the long and uniform service of machines operating under strain and stress.

All Emerson Beaters and Refiners are regularly equipped with Bolton Quality Steel, Bronze, or Stainless Steel Knives.

Emerson Manufacturing Company
LAWRENCE, MASS.

Sixteenth Annual Safety Congress In Chicago

Sessions of the Pulp and Paper Section Are Held at the Hotel Stevens and Are Well Attended —Meetings Are Addressed by Representative Men in the Industry on Subjects of Timely Interest and Importance

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, October 3, 1927.—The Sixteenth Annual Safety Congress of the National Safety Council was held here throughout last week and was a decided success. The Paper and Pulp Section of the Congress held inspirational meetings on the 27th, 28th and 29th under the guidance of Chairman W. J. Peacock, Northern Paper Mills, Green Bay, Wis., Vice-Chairman M. G. Hoyman, Kimberly-Clark Company, Neenah, Wis., and Secretary Ameil Umberham, Fort Howard Paper Company, Green Bay, Wis.

Sessions Held at Hotel Stevens

The sessions of the Paper and Pulp Section were opened at a breakfast meeting for officers, committeemen and speakers held Tuesday morning, September 27, in the Colchester Grill of the Hotel Stevens. The Tuesday morning meeting was billed as "Paper Mill Safety Organizations in Action." W. A. Gleason, Hammermill Paper Company, Erie, Pa., presided. Alvin F. Record, International Paper Company, Otis Division, Chisholm, Maine, B. D. Rogers, Bird & Son, East Walpole, Mass., and C. K. Boyer, manager Interlake Division, Consolidated Water Power and Paper Company, Appleton, Wis., were the speakers. Their respective subjects were "Accident Analyses, Records and Costs," "Plant Inspection and Safety Committees," and "Standard Guarding and the Code."

M. G. Holman Presides on Wednesday

The Wednesday meeting was presided over by M. G. Holman, Kimberly-Clark Company, Neenah, Wis. The program was a symposium entitled "Selling Safety to the Paper Mills." D. D. Thirkield, Oglesby-Smith Paper Mills, Middletown, Ohio, spoke on the selling of safety to the employees, W. E. Walker, Kalamazoo Vegetable Parchment Company, talked on the selling of safety to the foremen and J. H. Slater, Escanaba Paper Company, Escanaba, Mich., on the sale of safety to the superintendents.

John Lundrigan, Industrial Superintendent, International Paper Company, New York City, gave an address on "Practical Experience in Accident Prevention." Each of the two morning programs was followed by interesting and valuable discussions over the various points brought up by the speakers.

An Enjoyable Luncheon

The Wednesday luncheon was addressed by G. E. Burns, National Safety Council, Chicago, C. E. Pettibone, vice-president for Industrial Safety National Safety Council, D. C. Everest, president, American Pulp and Paper Association, New York City.

The Thursday morning meeting was held for intensive study and discussion of the major problems of the Section, especially for new officers, regional directors and committeemen to acquaint them with their tasks and to adopt a unified program for the coming year.

More Than 5,000 Attend

The National Safety Congress drew more than 5,000 visitors to the city of Chicago and many of these guests were executives of paper and pulp mills from paper and pulp centers all over the country.

Practical Experience in Accident Prevention*

John Lundrigan, Industrial Superintendent, International Paper Co.

The prevention and care of accidental injuries in industry may be summarized as a policy and an education in what constitutes safe conditions and safe conduct, and seeing to it that the policy is maintained and the education actually carried on as an integral part of the operation of industry applied individual occupation. A good part of this program is the direct duty and responsibility of owners and executive managers of industrial enterprises. So far as policy is concerned, the sole responsibility rests here.

Where owners and management are in favor of such policy, a tremendous responsibility and continuous duty devolve on supervision and administration, that is, on the men and women paid to supervise, direct and control individual employees. Because, particularly in large enterprises, individual owners and high executives cannot be expected to have more than a general knowledge of how to go about the job, and even if equipped with special training they have not the time required, as the business of maintaining safe conditions and practices runs current with every moment that industry contains a human tenant.

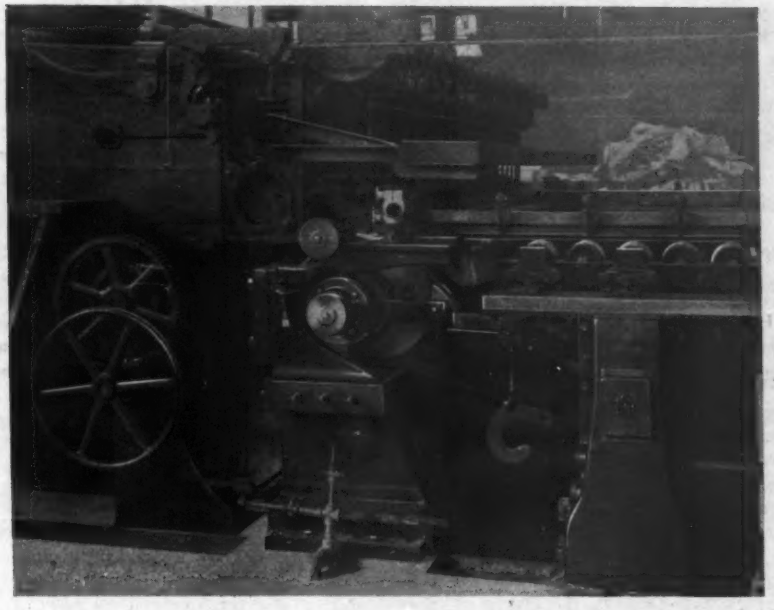
So, when we speak of administration and supervision, we mean the man in charge "where the wheels go round." He may or may not be an owner or executive. To this group falls the responsibility of creating and maintaining a system for securing the safety and promoting the health of every human over whom they exercise supervisory control. Such a system must be very much more than a perfunctory set of rules or even arbitrary rules. Its application must go infinitely further than posting of the printed word on bulletin boards or even the distribution of individual booklets to each employee. As a matter of fact, many high grade practical rules amount to nothing more than an alibi for putting the blame on the injured person after the accident has occurred, because such a rule was not obeyed.

We all know that the Golden Rule, Ten Commandments, eight Beatitudes and many similar exhortations provide for an exemplary line of conduct. The unfortunate thing about them is, most people have only a vague or imperfect knowledge of their text or meaning and little or no feeling of personal responsibility for their observance, as well as a lack of human authority behind their enforcement.

Becoming Submerged in Laws

We are becoming almost submerged in an ocean of laws and codes intended presumably to correct the ills of industry by government fiat. Nearly all of them create positive added costs in construction, alteration, equipment, compensation and medical care of injuries, and not by any means the least is added taxation to support government enforcement. We do not question the need of many such laws; because the attitude of some groups of employers is like the manager whose alibi is, "the injured person did not obey the rule, therefore he was to blame"; and they take the position, "I live up to the law, therefore the accident was no fault of mine." This leaves the legislator with no other remedy than to make the law more drastic; thus another bill is passed and while costs are increased the business of killing and maiming humans not only goes on but increases in both numbers and proportion.

* Presented at the annual meeting of the Pulp and Paper Section of the Congress of the National Safety Council, Chicago, Sept. 26-30, 1927.



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While a lot more could be said, we will call this enough in the way of glittering generalities, because you have a right to ask what we have done about all this and what, if anything, do we propose the rest should do. The best way I know of to meet that situation is to give you a rough outline of what our company has accomplished and how it was brought about, omitting of necessity details because time does not permit.

Up to the year 1917, in common with most other industrial concerns, while we did not intend to kill or injure employees and did what we could with the help of insurance carriers to prevent accidents, no intensive effort was made in that direction. Our experience had become so bad we decided it must be remedied if it was humanly possible to do so. What we have accomplished in the ten year period, 1917 to 1926, inclusive, is best illustrated in the following table dealing with the more important items:

	1917	1926	Decrease
Lost time accidents....	1,399	451	948
Fatal accidents	12	4	8
Total days lost	18,194	7,046	11,148

An Improvement Over 1926

We might add that the first half of the current year 1927 shows an improvement of approximately 25 per cent over 1926 experience.

While we are none too proud of our current experience, it must be admitted we did "go some" compared with 1917, particularly when the best available information indicates that there has been a general increase, instead of a decrease, in industrial accidents as a whole.

Now, I know you want to know how we did it, which is the easiest and simplest part of the story. In the first place, there not only was no difficulty in securing the wholehearted support of our owners and executives, but we have known from the start they were solidly behind any effort made to improve existing conditions. Next, we were fully aware that the only place where accidents can be prevented is on the job. We made up our minds the men on the job were going to be the ones who "did the trick"; they were not only to have all the credit for any improvement shown, but were in fact to be the authors of the plan or conditions under which it was to be accomplished. Therefore, instead of taking them into our confidence, we asked to be taken into theirs.

All of us realized that with twenty-odd plants scattered over 1,500 miles of territory, system and regulations would be vitally important, so we collaborated on working out what amounts to a Magna Charta, or Constitution, intended to be not our maximum but our minimum of requirements, with each unit free to go as much further as local conditions and their resources permitted. This document when put into effect could honestly be said to have been created by the employees and local management of all of our plants, because they had either proposed or approved of every feature in it. Its foundation (or perhaps keystone is better), lies in the fact it became officially and positively a part of the manufacturing policy of our company. I am leaving a copy of it with your chairman, so will only refer to its main features.

Plant Manager Responsible

We make the plant manager, who is our company so far as his locality is concerned, personally responsible for its everyday application as a part of his manufacturing operation. He is even personally the active chairman of his plant committee and does actually preside at all committee meetings unless he is absent from the plant. The committee includes all department heads, resident engineer, plant nurse and physician, where one is employed, together with one or more workmen selected by their fellows from each department. Should there be failure to make such selection, substitutes are appointed by the manager or department superintendent. Then comes the local supervisor of safety and sanitation who devotes all his time to the study of accident causes and their prevention, which includes supervision of the local plant employment service. At large plants he has such assistants as are needed. He is personally responsible to the local manager and in the matter of interchanging information, making required reports, etc., to the general management as well. The general office end serves as a clearing house and distributor of information, not only on accidents within the company, but from all available sources such as the National Safety Council, the National Industrial Conference Board, Government Departments, etc.

One of the things we give special attention to is seeing that all plants get full information relating to serious or unusual types of accidents that occur at any of our plants, so that each is at all times getting the benefit of the experience of the others, enabling all of them to guard against the conditions causing an accident at one. This type of information is sent out without delay, supplemented every three months by a detailed report of experience at all plants rated according to efficiency. In order that large and small plants may be on an equal footing, this rating is on the basis of "lost time per 100 employees" which includes all time lost during the report period without reference to when the disability began. Our system and reports provide positive information and a complete check on all lost time accidents including current cost. In the case of fatal accidents a penalty of 1,000 days is added and for total disability after one calendar year of lost time has been charged, a penalty of 500 days is added. So you see our separate plants are practically engaged in a continuous accident prevention contest each with the other.

Cost of Industrial Accidents

Some time ago, we added to our manufacturing cost sheet a separate item showing the cost of industrial accidents. We know this has a direct influence on accident prevention because it is a positive and frequent reminder of cost variation for this item, the same as is the case of stock, power, etc.

Five years ago we established what we term an "employment service," to which we later added a system of physical examination of all future employees, which has been and is of practical value in accident prevention. This service is in charge of our safety supervisor, thereby coupling it with our safety organization. It provides a positive contact with every new employee providing opportunity to start them right by posting them as to our safety and health program, as well as seeing to it they are properly instructed in the work they are to do. This part of our system is a long story by itself; therefore, it cannot be gone into here any further than to point out what is already known, that accidents and health are closely identified, for which reason we take a real interest in the health features of this service. No one is rejected for employment on account of any physical disability that will yield to treatment, provided the person concerned is willing to co-operate in being restored to health. The system provides for financing this procedure so as not to be a burden on the employee concerned. We also undertake to transfer men who are not fitted for the particular job in which they have been placed, but may be properly placed at other work.

The foregoing provides a somewhat rough and very condensed outline of what we are doing and how it is brought about. But, after all, while we feel sure we have good practical rules and regulations, we find the big thing is personal contact plus instruction, advice and encouragement to the men on the job by the department superintendent, foreman, gang boss or whatever you may call him. To his crew this "Boss" on the job is the company and that is as it should be, because in actual practice management looks to him for quality, quantity and cost of production. As a matter of fact, he is the "Top Sergeant" of industry and the real point of contact between employer and employed; which, as we see it, means that if safety is to be "put across" he is the largest single factor in doing it.

Has Needed Equipment

Thus it naturally follows we must see to it that this important man has the needed equipment. It is more than likely he became a boss because of long and efficient service in one plant. In most

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instances he has had very little outside time or opportunity to learn of many things needed to combat successfully the hazards of industry. Often he may not even realize the existence of a real hazard or know a practical way to avoid it or how to instruct others to do so. This is one of the situations we try to meet by securing this information for him and then giving him all of the assistance and encouragement we can in its practical everyday application. This is perhaps the most important part of our safety supervisors' job, and in turn our job at the general office, to see that the information reaches the plant organization.

We have studied and tried many and various forms and methods of providing information and securing interest. We have no quarrel with any of them. In fact, we have and will probably continue to use many devices and services that may or may not help in this work.

We do, however, want to testify to what I consider not only a real help, but a practical necessity in this work of preventing accidents. That is, the Safe Practice Pamphlets issued by the National Safety Council. Not only on account of the technical and practical knowledge and experience utilized in their preparation, but on account of the form in which they are provided, treating each subdivision or separate hazard by itself in a comparatively small and well illustrated pamphlet, using such language as the men in the street may understand. We believe they are not only the best sources of information, but the best reference data for the everyday use of the man on the job.

Engineering Association

Engineering associations and individual engineers have done and are doing a great deal to improve safety of structures and equipment by the elimination of hazards in plans and specifications for construction, equipment and machinery. It is not only safer and more sightly to build safety requirements as an original part of structures, equipment and machinery, but less costly than to be compelled to install them later. We should encourage this character of service.

Beyond machinery and power transmission hazards, there is still a larger field not often fully realized. Our experiences show 85 per cent of lost time and costs result from accidents in the most ordinary occupations and operations, largely owing to lack of knowledge on the part of the injured how to do his job safely (which nearly always means efficiently). Just because it is an ordinary or common job, management and supervision seem to take it for granted persons so engaged need little or no instruction other than to keep moving. We are convinced it is just as important to teach employees safe methods of loading and unloading, piling or taking down piled material, digging ditches, taking care of tools, etc., and in any of the hazards of industry, and having done this we must exercise constant vigilance to see that safe practice continues.

We have no quarrel with insurance companies; in fact, know they render considerable service in developing and carrying on safety education and practice. At the same time, we are convinced our policy of carrying our own compensation insurance risk is one of our most valuable helps and incentives in centering constant attention on not only the prevention of accidents, but seeing to it that every available assistance is given to hasten speedy and complete recovery of those who are injured.

Safety Education in the Future

Time and space permit only a brief reference to what can, and we believe must, be done along the lines of safety education for the future. It must begin in the school and be made an integral part of our educational system in order that the children may secure fundamental training in safety and health that must have a large influence in their adult life. Our company is doing something along this line usually by co-operation with local school authorities in the way of providing material for study and to some extent personal attendance of members of our safety and nursing system.

Lastly, we believe there is a positive need for better information in the form of what is commonly termed statistical data, in order that all of us may have a better and larger knowledge of what is actually going on. In our opinion, the existing basis on which such data is computed is neither practical nor fair and does not lend encouragement to employers to voluntarily provide necessary information.

We are hopeful this Council or some equally reputable body will promote a proper basis of statistical data and develop a scheme or system for its compilation and distribution. We believe it would be a misfortune to continue the present system which does not furnish any real information and has a distorted basis. Unless something is done we may find the whole subject taken out of the hands of the direct representatives of industry and added to the board of governmental duties and supervision already existing.

Summed up, we must provide individual responsibility for capable study of our own accident and health hazards and experience as well as similar information from all available sources. We must make such information available and provide for the facilities for its application in the case of all employees, particularly the "Gang Boss." We must assist him in educating the individual workman as well as providing him with the authority and resources to establish safe operating conditions and safe practice. We must see that injured persons have competent medical care which often means help beyond what the physician may give. All of which, we believe, we have proven can be done in large industrial organizations with little or no added costs per unit of production and a large saving in accident costs. We believe the same thing may be accomplished on a community basis where groups or numbers of small plants or industries are willing to co-operate. Our principal slogan is good housekeeping which means cleanliness and order. This automatically compels safe places in which to work and requires teaching employees safe and orderly practices, which combined spell efficiency, safety and health.

Accident Analyses, Records and Costs*

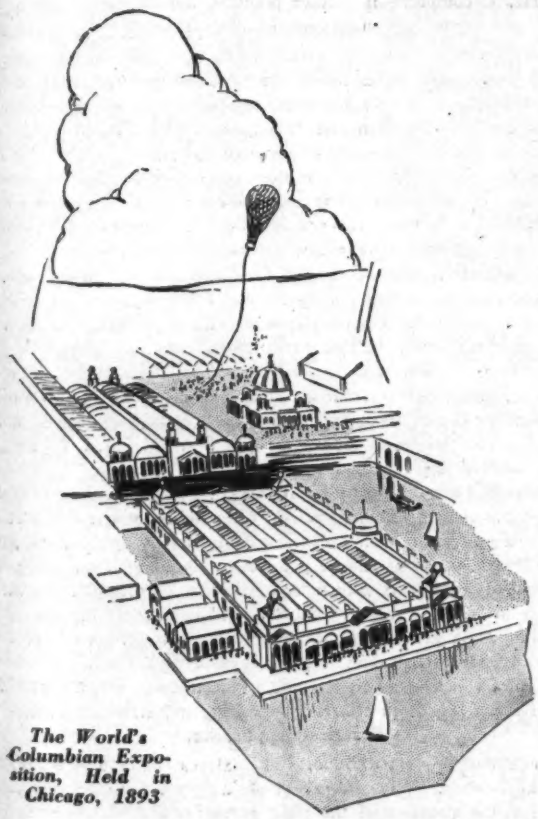
Alvin F. Record, Supervisor of Safety & Sanitation, International Paper Co., Otis Division, Chisholm, Maine

In an age when facts, figures and statistics are essential to the operation of any business, what modern manufacturing concern would attempt to do business without keeping a very accurate record of its costs of raw materials, labor and all other items, no matter how small, entering into the cost of manufacture, as well as an itemized cost of its various processes and departments? Suppose at the end of the year the profit and loss account of the balance sheet shows "red" or the profits are unsatisfactory as compared with previous years or with industry as a whole. The alert executive is thereby warned that there is trouble coming, that something is amiss. With the aid of his accounting and statistical departments he immediately sets out to ascertain just where the difficulty lies. If his system functions satisfactorily he will find the changes in his material and labor costs in each process and in each department as well as all other items entering into the question which will furnish him with a basis for wise changes in policy and possibly personnel.

What is true with business in general is also, in an equal mea-

* Presented at the annual meeting of the Pulp and Paper Section of the Congress of the National Safety Council, Chicago, Sept. 26-30, 1927.

Appleton Felts and Jackets



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QUALITY SERVICE

ure, true with any accident prevention plan. The man on the job directly interested in the prevention of accidents cannot but be deeply impressed with the necessity for, and the importance of, accurate accident statistics, whereas, those not coming into contact with the compilation and application of such statistics sometimes are apt to undervalue their use and importance. The collection of figures which have no practical value, is, of course, merely a waste of time and effort and it is quite necessary to sort out much interesting but otherwise useless materials. However, proper statistics to the man of the job are what the thermometer is to the physician and the compass to the mariner. They eliminate guess work and furnish certainty without which we cannot secure the results for which we strive.

Statistics should be compiled, first, to indicate the relative hazards and danger points in the mills where they are to be used; second, to determine and measure the results of accident prevention work being carried on; third, to stimulate interest and competitive effort in accident prevention work as between plants in the same industry and also between mill departments; fourth, to show the costs per department or per unit of production as far as the actual known expense is concerned, such as medical and compensation expense.

Facts compiled with these objectives in view and studied intelligently and applied should go a long way in assisting the safety overseer to point out causes of unsatisfactory experience and enable him to offer suggestions for overcoming them.

Full Information on Each Case

In making up and keeping any set of records it is first necessary to collect full information on each individual case from the time medical attention is rendered until the employee has been discharged from treatment and has returned to work and all compensation and other expense has been ascertained and tabulated.

Figure 1 shows the form used for first reporting injury, giving full history of the injured and his injury. This report is the basic report, containing all the information necessary in making up subsequent reports.

This originates in the first aid room where the injured employee's history is taken together with the doctor's report on the extent of injury and the employee's own statement as to how the accident happened. It is then passed on to the safety department where investigation is made with the interested department superintendent, and, where possible, the exact cause for the accident and conditions surrounding the cause ascertained. It is then typewritten and filed in its individual folder, together with all correspondence and papers connected with it. Compensation payments are listed on the inside cover of the folder, as indicated.

Lost time is figured, beginning the day following the accident, and ends with his actual return to work, excepting in case of a total and permanent injury where an arbitrary penalty of 500 days is charged in addition to one calendar year of actual lost time, and in case of a fatal accident, 1,000 days.

Besides containing complete accident history, the report when conscientiously filled out also gives important information relative to determining the causes of the accidents and offering suggestions for the correction of wrong conditions and the prevention of future accidents.

Take, for instance, the question, "How Long Employed by Company?" When this information is tabulated from a number of accidents over a continuous period, it will be surprising to learn how many new employees and men transferred to new occupations will show up as injured. Correction of this condition will largely revolve around the question near the end of the report, "Was Employee Instructed in the Proper Method of Doing His Work?"

Such questions as, "Place Where Accident Occurred?", "Was Light Good?", "How Can Such Accidents Be Prevented?", "What Steps Have Been Taken to Carry Out Above Recommendations?", are all pertinent and when followed up most certainly will turn the spot light on conditions which usually can be remedied and which certainly will go a long way toward the prevention of future accidents of the same type.

Figure 2 is a detailed report covering "Record of Accidents and Costs" and seems to be practically self-explanatory, listing and recording each item of expense connected with each individual injury.

This form is used at the mill end and serves the purpose of placing before the interested parties the story of each month's performance, as far as the number of accidents, lost time and cost is concerned. Our mills use this information in a variety of ways. It is especially handy in keeping up curve sheets on each of these items to indicate progress or the reverse. It is put into the form of monthly reports to the supervisory force and made the subject for bulletin posting.

The quarterly and yearly reports, as compiled and sent out from our general office, are especially valuable in that they point out and analyze hazards and danger points within different mills; measuring the effect of prevention campaigns and stimulating interest and competitive efforts between mills.

Figure 3 shows the first of these reports.

This gives the relative standing of all mills based on "Days Lost per 100 Employees" and also shows "Lost Time per 100 Employees." This report is issued quarterly for the first nine months of the year, the last one covering the whole year's experience in which penalties are charged for the fatal and permanent and total disability accidents. This illustration shows one of these yearly statements. The comparative summary is specially included to show the company's progress from year to year as a unit.

Figure 4 gives quite a remarkable analysis of lost time accidents over the yearly period. The upper section of this chart shows, "Causes of Accidents" in graphical form. Causes are divided under 12 headings and show how our accidents happen.

The section in the middle marked "Occupation" shows where our accidents occur and plainly indicates where preventive efforts should be centered. This classification is also divided into 12 distinct processes entering into paper manufacturing.

The last graph covers "Description of Inquiries" and indicates what injuries resulted from accidents. The practical use of this information comes from such items as "Infections," which indicates on the face of it lack of proper first aid; "Eye Injuries," the lack of proper eye protection, etc.

Figure 5 is a more detailed edition of the preceding form. Each mill of the company is designated by a number, and it shows at a glance where each of its plants are meeting with difficulty and where extra efforts should be put forth. By comparison each mill can check its accidents with those of sister mills of equal size with respect to "How," "Where" and "What" has occurred.

This gives a general idea of this company's method of recording its accident costs and records as well as the analysis of its experience which seems to be standing the test and which it considers of much benefit in efforts to eliminate industrial accidents.

Practical Application

The test of any set of reports or analyses comes with its practical application. When a period shows up unsatisfactorily and comes to the attention of the plant executive and his safety overseer is called in for explanation, it is then that his system should justify its existence. He should be able to say to the executive that the trouble lies at this or that point, that a certain number of new employees have received injuries in a cerain department, which indicates the lack of proper supervision; that there has been several stumbling or slipping accidents at another point, which might indicate poor housekeeping; or that several infections have developed at another point, indicating lack of first aid attention. The executive by confronting his department heads with this information certainly is able to place responsibility, and it is indeed interesting, when this is done, to see the little curve indicating progress tip its way downward again to the point where accidents, with the suffering they cause and the expense they make, will be a thing of the past.

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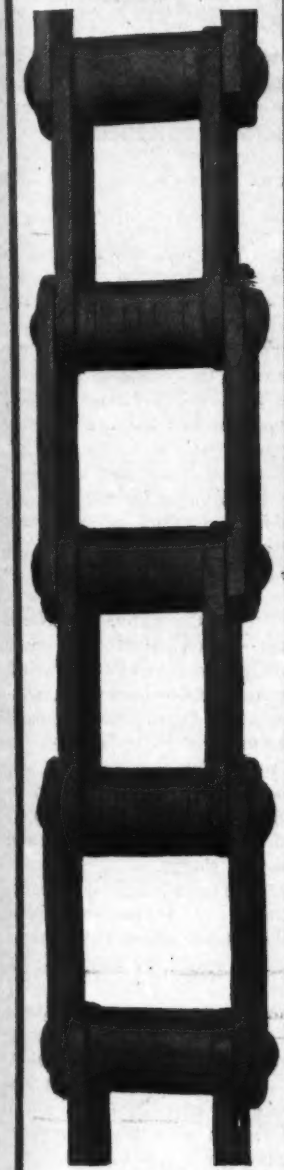

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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Erie, Pa.—The Hammermill Paper Company, East Lake Road, has awarded a general building contract to the Henry Shenk Company, Twelfth and Sassafras streets, for a new addition to its mill. It will be three-story, designed for expansion in the sulphite pulp division, estimated to cost close to $45,000, with equipment. R. E. Behrend is president.

Jacksonville, Fla.—The Bo Kay Perfume Company, Forest and Grape streets, has begun the erection of a new addition to its plant to be equipped for the manufacture of paper boxes and containers, including set-up boxes for packing the company's product. The new unit will be one-story, 35x105 feet, estimated to cost about $35,000, with machinery. J. Rouss is president; and W. R. Sargent, vice-president and general manager.

Camden, Ark.—The Southern International Paper Company has contracted with the Arkansas Power and Light Company, Pine Bluff, Ark., for power service for its local mill, and a substation will be constructed for this purpose. The power company is arranging for the construction of a transmission line from Sterling, La., about 75 miles distant, to operate at 110,000 volts, and will utilize in connection with the mill supply. A fund of more than $300,000 will be expended in connection with the electrical development for the mill.

Spokane, Wash.—The B. G. Ewing Paper Company is said to be planning the early rebuilding of its building used for storage and distributing service, on site near Division street, destroyed by fire September 16, with loss reported at close to $100,000, including equipment, stock, etc. It is understood that the property carried insurance of about one-half this amount.

Houston, Tex.—Officials of the O. B. Andrews Company, Inc., Rosedale avenue, Chattanooga, Tenn., manufacturer of paper goods, have organized a new subsidiary to operate in Texas, to be known as the O. B. Andrews Company of Texas, Inc. The new company has leased a building at the corner of Commerce and Jackson streets, Houston, 80x90 feet, and will take early possession; the structure will be remodeled and improved and machinery installed for the production of fiber boxes and cartons. The initial works will have a capacity arrangement to provide for early increase in output, and is estimated to cost in excess of $100,000, with equipment. The new mill will be operated in conjunction with the Atlanta Container Corporation, Atlanta, Ga., another subsidiary of the O. B. Andrews organization. P. F. O'Dwyer will be general manager at the Houston plant.

Sacramento, Cal.—The recent fire loss at the local plant of the Zellerbach Paper Company is reported as upward of $100,000, including building, equipment and stock, instead of a smaller sum previously announced. The fire also damaged a portion of the plant of the Ward Steel Company on adjoining site. The Zellerbach organization is understood to have plans in progress for the rebuilding of the destroyed unit.

Wisconsin Rapids, Wis.—The Consolidated Water Power & Paper Company will soon break ground for the construction of a new two-story addition to its local mill, to be 60 x 120 feet, designed primarily for turbine room service. It is reported to cost more than $85,000. A contract for structural steel frame has been let to the Worden-Allen Company, Milwaukee, Wis. The majority of the work will be handled on a day labor plan. Thomas Utegaard is general manager.

New York, N. Y.—Fire, September 16, damaged a portion of the plant of the Perfect Patent Folding Box Company, 36-42 West 24th street. An official estimate of loss has not been announced. The damage will be replaced.

Manassas, Va.—Rivers & Streams, Inc., Manassas, Va., operating lumber properties, is said to be planning for the purchase of machinery for the cutting, grinding, and bailing of pulp wood, to prepare the product ready for shipments to paper mills. A local building, it is said, will be given over to this branch of service.

Philadelphia, Pa.—The Globe Ticket Company, 116 North Twelfth street, manufacturer of paper goods, is reported to be planning the construction of an addition to its plant at Twelfth and Cherry streets, to provide for considerable increase in present output. W. A. Hering is president. Details and estimates of cost, it is understood, will be arranged at an early date.

Tulsa, Okla.—The Industrial Blue Print and Supply Company, recently organized with capital of $25,000, is said to be arranging the operation of a local plant for the production of blue print papers, etc. F. L. Allen, 1515 South Rockford street, is one of the heads of the company in charge.

Astoria, Ore.—The Northwest Pulp and Paper Company, Astoria, has asked bids for structural steel frame work for a proposed new mill unit on local site totaling about 1500 tons of material. The expansion is reported to cost more than $500,000, with equipment.

Woronoco, Mass.—The Strathmore Paper Company, Mittineague, Miss., has work in progress on improvements at its local mill, comprising remodeling of certain equipment and installation of required machinery for increased operations. It is proposed to have the plant ready for service at an early date.

Mosinee, Wis.—The Wausau Sulphate Fibre Company, Mosinee, Wis., is pushing construction on a new one-story mill unit, 70 x 110 feet, for which plans were completed a few weeks ago and proposes to have the structure ready for equipment installation at an early date. It will be used for finishing service. C. R. Meyer & Sons Company, 50 State Street, Oshkosh, Wis., is general contractor.

Toronto, Ont.—The Dominion Box Boards, Ltd., operated by the Dominion Envelopes & Cartons, Ltd., 130 Duchess street, Toronto, has plans maturing for its proposed new plant on property recently acquired on Fleet street. The project will comprise a group of one-story units, including main mill and beater department, 120 x 660 feet; machine shop, 55 x 400 feet, and smaller structures, all of brick, steel and concrete. It is estimated to cost more than $700,000, with machinery. James L. Carey, 208 North Laramie Avenue, Chicago, Ill., paper mill engineer, is preparing plans and bids will be asked from this office at an early date.

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New York Trade Jottings

Dr. E. O. Merchant, of the Mead Pulp and Paper Company, Dayton, Ohio, was a welcome visitor to New York last week.

* * *

James d'A. Clark, of Bowater's Paper Mills, Northfleet, Kent, England, was a prominent New York visitor last week.

* * *

W. C. Bemiss, of the California Gummed Products Company, San Francisco, Cal., has been visiting his friends in the New York paper industry.

* * *

Paul S. Hanway, statistician of the American Paper and Pulp Association, attended the regular meeting of the American Waxed Paper Association, at the Stevens Hotel, Chicago, September 30.

* * *

The regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry was held at the Canadian Club, last Monday, and attracted a fair attendance, despite the unusually hot weather.

* * *

A. H. Hooker, Jr., director of technical services, of the Hooker Electric Chemical Company, Niagara Falls, N. Y., and James Rogers, Jr., arrived in New York last week after an extensive tour of Europe, during which they inspected many of the leading paper mills.

* * *

W. G. MacNaughton, secretary of the Technical Association of the Pulp and Paper Industry, recently spent several days visiting mills in the Miami Valley in preparation for the Fall Meeting of the Technical Association, which will be held in Middletown, Ohio, on October 5, 6 and 7.

* * *

O. M. Porter, assistant secretary of the American Paper and Pulp Association, attended the regular meeting of the Glazed and Fancy Paper Manufacturers Association, in Providence, R. I., September 27 and the meeting of the Binders Board Manufacturers Association, at Westport, Conn., Friday, September 30.

* * *

J. V. N. Dorr, of the Dorr Company, engineers, who has been abroad for the last three months, arrived in New York October 1 aboard the steamship *Roma*. During his stay Mr. Dorr conferred with his business associates in London, Paris, and Berlin and visited many of the industrial centers of Europe with members of his foreign staff.

* * *

Dr. Hugh P. Baker, of the American Paper and Pulp Association, will represent the association at the annual meeting of the American Trade Association Executives to be held at West Baden Springs, Ind., October 6-8. He will lead the discussion of a paper to be presented at the meeting by Merle Thorpe, Editor of *Nation's Business*, on "The Purposes and Plans of the Chamber of Commerce of the United States with Relation to Trade Associations."

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, spent September 30 and October 1 visiting mills in the Portland-Bangor section of Maine and on Saturday evening, October 1, gave an address at the dinner of the Northeastern Section of the American Pulp and Paper Mill Superintendents' Association, held at The Inn, Bethel, Maine. On October 3, Dr. Baker gave an address on "The Business of Manufacturing Paper in the United States" at the annual meeting of the Robert Morris Associates, which is the national association of bank credit men, at Wernersville, Pa.

* * *

The International Paper Company, New York, has called for redemption on December 1, at 102½ and interest, all its 15-year 6 per cent convertible gold debentures which will be outstanding at that time. About $13,700,000 of these debentures have been converted, and $10,000,000 recently were called for redemption on October 1. The original issue, sold in 1926, amounted to $25,000,000. Rights to convert the debentures into cumulative 7 per cent deferred stock and at the same time to purchase two common shares at $40 each for each $1,000 of debentures converted will extend to the date of presentation of the debentures for redemption.

* * *

Representatives of two of the largest pulp mills in Sweden are now on a tour of this country and Canada visiting various paper and pulp mills. F. Olsson and W. Hellgren, sales manager and technical manager, respectively, of Uddeholms Aktiebolag, Uddeholm, Sweden, arrived here on September 20 on the m/s *Gripsholm*. The Uddeholms Aktiebolag is the manufacturer of kraft pulp and bleached sulphite and its other interests include timber and steel. M. Wallerstrom, sales manager of Wifstavarfs Aktiebolag, Wifstavarf, Sweden, has been in this country several weeks and has already visited a number of Western paper mills. He is now traveling through the East and Canada and expects to return to Sweden about the middle of October. Mr. Olsson, Mr. Hellgren and Mr. Wallerstrom are making their headquarters, while in the United States, with the Scandinavian Pulp Agency, Inc., of 342 Madison avenue, New York, who are the sole agents of their pulps.

* * *

Several members of President Coolidge's National Committee on Wood Utilization visited the Chemical Exposition at the Grand Central Palace, New York, last week, and found considerable to interest them. The President directed the organization of this group two years ago, with Secretary of Commerce Hoover as chairman and Colonel W. B. Greeley, of the Forest Service, Department of Agriculture, as vice-chairman. W. H. Matthews, of Memphis, Tenn., president of the National Wood Chemical Association, heads the wood chemical group. The wood chemical industry is an important factor in the committee's program for the reason that through proper cooperation with other wood-using industries, much raw material unsuitable for other purposes can be turned into wood chemical products.

* * *

E. K. Mansfield, of the E. K. Mansfield Company, 501 Fifth avenue, New York City, announces that C. H. Kent (Bert Kent) became a member of the firm on October 1. Mr. Kent is severing his connections with the Kalbfleisch Corporation, of New York City. He has been associated with the paper industry for the past fifteen years.

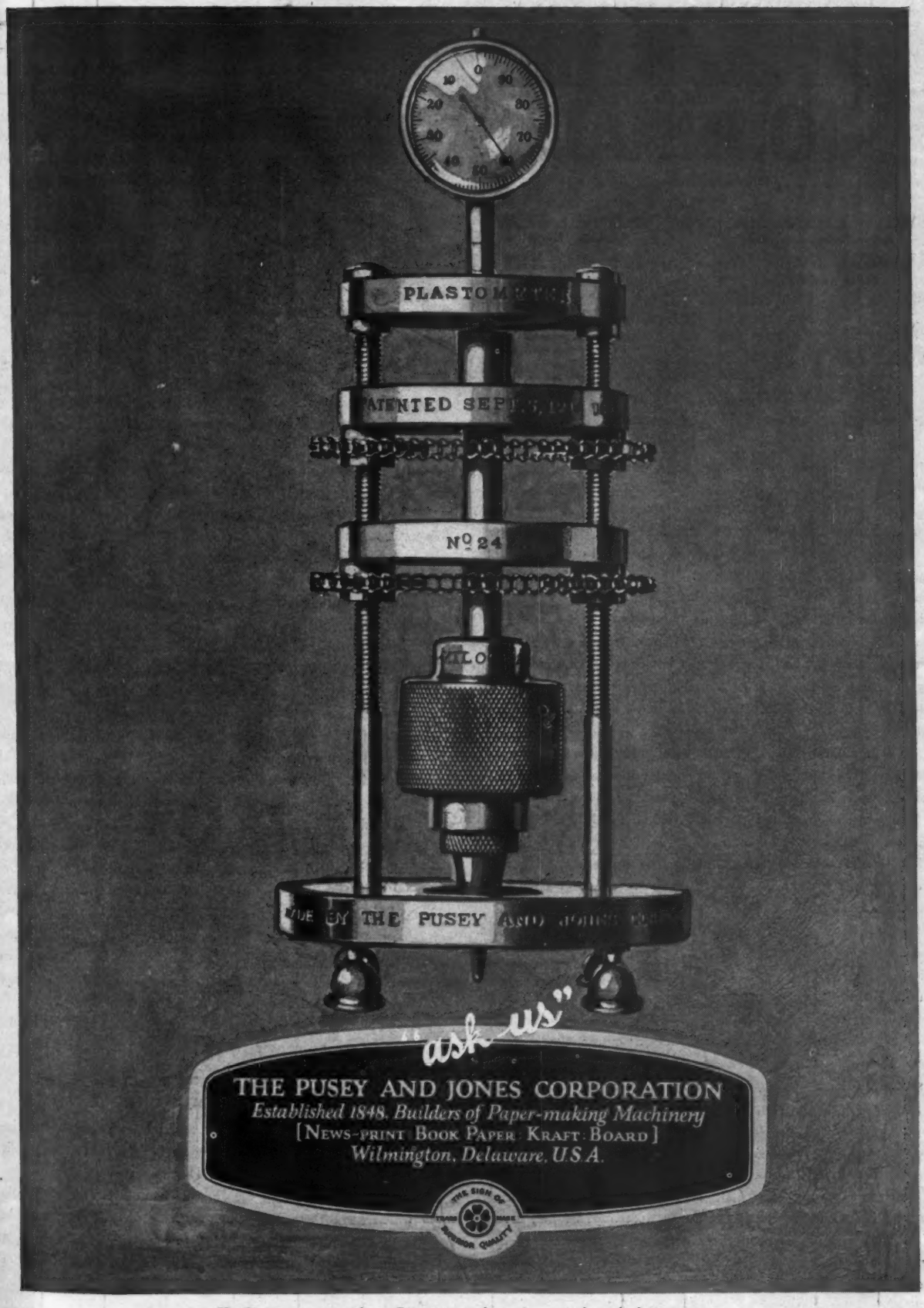
Mr. Kent was graduated from Dartmouth College in 1910, majoring in chemistry. In his capacity as sales engineer, Mr. Kent has combined his knowledge of chemistry and paper making. This knowledge, no doubt, will be very helpful in his new connection. He is known in the various paper-making centers throughout the United States, and has been very active in the work of the American Pulp and Paper Mill Superintendents' Association, especially in the Connecticut Valley Division. He is also a member of the Technical Association of the Pulp and Paper Industry.

Glazed and Fancy Quarterly Meeting

The Quarterly Meeting of the Glazed and Fancy Paper Manufacturers Association is to be held at Springfield, Mass., on November 22.

Gummed Tape Men to Meet at Buffalo

The next meeting of the Gummed Tape Manufacturers Association is to be held at Buffalo, N. Y., December 6 and 7.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PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. LXXXV New York, October 6, 1927 No. 14

IMPROVING PAPER STATISTICS

A committee composed of representatives of practically all groups in the paper industry met last spring to determine what statistics the Bureau of the Census could collect for better use by the paper industry.

After several meetings, largely attended and following many sub-committee meetings, recommendations were made as follows:

1. Changes in the paper schedule in line with the growth of the industry and its various branches.

2. Changes in the wood pulp schedule which would identify this division as an industry within the industry.

3. A new schedule for converted paper products which would identify many grades of paper not heretofore given recognition by the Department except in compilations as to value and in conjunction with many other extraneous items which belonged elsewhere.

4. An annual abbreviated schedule for production, etc., of paper, wood pulp and converted paper products instead of the biennial schedule now in force.

The proposals, with changes suggested, were all accepted by the Bureau of the Census. Mr. A. H. O. Rolle and Mr. M. B. Lane, of the Census Bureau, served on the committee and as a result were prepared to submit the new schedules in a form satisfactory to the committee.

Cooperation was received from Mr. John Matthews, Jr., assistant director of Foreign and Domestic Commerce, LeVerne Beales, Chief Statistician, Mr. J. F. Daley and Mr. Fitzpatrick, all of the Bureau of the Census, and from Mr. Charles W. Boyce, of the Forest Service. The chairman of the committee was Mr. C. B. Morgan, treasurer, S. D. Warren Company, and the secretary, Paul S. Hanway, Statistician of the American Paper and Pulp Association.

Messrs. M. C. Dobrow, Writing Paper Manufacturers Association; G. A. Ware and George D. Bearce, News Print Service Bureau; Grafton Whiting, H. A. Dickie and B. J. Raeber, Paperboard Industries Association; C. E. Dobson, Southern Kraft Manufacturers Association; D. A. Wilcox, Oxford Paper Company; H. C. Scott, International Paper Company; Stanley Byron, Hammermill Paper Company, and many others gave considerable time and cooperation to the compilation of these schedules in a most helpful manner.

All reference to wood pulp and other subjects was removed from this schedule. Changes were made as recommended by the following groups: News Print Service Bureau, Book Paper, Writing Paper, Tissue Paper, Southern Kraft, Paperboard Industries Association, Glazed and Fancy, Waxed, Gummed Tape, Absorbent, Coated Book Paper, Carbon Paper, Cartons and Containers, Napkins, Toilet, Twisting, Towels, Card Board, etc., Paper Boxes, etc.

Practically every grade of paper will be benefited by these schedules, since they will show in more detail the actual production and at the same time indicate trends of consumption not heretofore ascertainable.

The paper board schedule will be uniform with that of the industry's statistical program.

Book papers will be classified to indicate consumption by books, lithograph, offset and body stock for conversion.

The matter of catalog and news tablet has been settled as applied to news print and allied products.

Sulphite bond paper receives a separate classification.

Greaseproof and glassine papers are separated in the new schedule.

Kraft wrapping is sub-divided into Northern, Southern and Pacific Coast.

All board products are classified under the general heading, "Paper boards."

Felts, sheathing and asbestos filled papers receive separate classifications.

In addition to the above, the amount consumed at the mill, transferred to other mills owned by the company and amount sold will be reported in three separate columns.

The paper schedule, in its general make-up, is suitable to better use by the industry and should aid in stabilizing the various grades since, in each case capacities also will be required.

A very definite contribution has unquestionably been made toward stabilization in the industry through the development of these schedules. Comments so far received from many mills indicate that the new schedules will be of practical value to every pulp and paper mill.

Mr. Hanway recently conferred with Mr. W. M. Steuart, Director of the Bureau of the Census, and other members of the Department, at which time approval of the new schedules was given and a promise made that beginning with 1928, an abbreviated annual census will be taken for the industry. This will give annual production data by grades—something which should have been in force for a billion dollar industry years ago—and is a further step toward the stabilization within the industry.

A report on the wood pulp and the new converted paper schedule will be published in the near future.

PAPER MILL EMPLOYMENT INCREASES

August employment in the paper and pulp and paper box industry increased over July according to figures just made public by the Bureau of Labor Statistics, Department of Labor.

Reports were received by the Bureau from 221 paper and pulp mills which gave their July employment at 56,777 increasing in August to 57,423, an increase of 1.1 per cent. The payrolls in these mills also increased from $1,458,889 in July to $1,501,278 in August, an increase of 2.9 per cent.

The Bureau also received reports from 176 paper box plants which gave their July employment at 19,047, increasing in August to 19,300, an increase of 1.3 per cent. The payrolls in these factories also increased from $423,750 in July to $437,856 in August, an increase of 3.3 per cent.

R. S. Kellogg Addresses Lafayette Advertising

LAFAYETTE, Ind., October 4, 1927.—"We use more than fourteen times as much news print in the United States today per capita as we did seventy years ago," said R. S. Kellogg, secretary of the News Print Service Bureau, New York, in speaking to the members of the Advertising Club here tonight. "The increase in per capita consumption of most basic commodities has been large, but in news print and all grades of paper it has been almost phenomenal. Twice as much coffee, four times as much sugar and seven times as much cotton per capita is a big jump over the quantity of these commodities consumed in our grandfathers' day, but these increases seem almost negligible when we realize that we use fourteen times as much news print and over twenty times as much paper of all grades as did our ancestors of less than three-quarters of a century ago. This is an interesting illustration of the ability of mankind to increase the consumption of commodities as their costs decrease.

"Needless to say," continued Mr. Kellogg, "we cannot expect the consumption of news print to increase in the next few years as it has in the past few, or we should begin to stagger under the weight of our newspapers. Last year we had a consumption of 3,400,000 tons of news print, or 58 pounds per capita. More than 500,000 books and pamphlets are published annually in the United States, in addition to more than thirteen billion copies of newspapers. The Census reports the value of printing products in 1925 as exceeding two and a quarter billion dollars. There are now more than 2,000 English-language dailies in the United States, whose circulations exceed 25,000,000 copies Sundays and 37,000,000 copies daily, which is an increase of 22 per cent in the past four years. There are nearly 70 newspapers of more than 100,000 circulation each which average around 30 pages daily and 110 pages Sundays.

"The outstanding characteristics of American industry today are low costs due to mass production by power and machinery and low prices to consumers facilitated by what is aptly called 'mass salesmanship' or advertising."

Longview Plant Almost Ready

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 30, 1927.—Test runs of machinery at the Longview Fibre Company's $3,000,000 pulp and paper plant at Longview, Wash., on the Columbia River, are being rushed to completion with a force of 585 men now employed on the job. The huge board machine which required 20 cars to transport it, was turned over last week to loosen it up, and plans are to operate the entire machine within a few days. Two of the four beaters are operating. The turbine was started in a test run also.

About half the power required by the new plant will be generated in the plant power house and the rest will be purchased from the Long-Bell Lumber Company.

R. S. Wertheimer, resident manager of the Longview Fibre Company, expects the plant to be in operation in October, employing from 300 to 400 men six days a week. It will have a capacity of 120 tons of pulp and of finished product, and will use 250 cords of wood daily from the mills of the Long-Bell Lumber Company.

Midwest Concrete Inserts

The Midwest Steel and Supply Company, Inc., of Bradford, Pa., have just published an interesting pamphlet describing the uses for 1-4 Concrete Inserts, which is now available for free distribution.

Cost Convention at Detroit, Oct. 20-21

With costs playing such an important part in present day manufacturing operations, there is every need for the exchange of information and ideas between the men responsible for the work carried on in the accounting department of pulp and paper mills, throughout the country. For the past nine years the Cost Association of the Paper Industry has held conventions and meetings in the East and Middle West, to promote this exchange of information, and to bring before the accountants the latest ideas on cost accounting technique, for just as big improvements have been made during this period in manufacturing efficiency and technical skill, so has a big advance been made in the cost accounting practice.

The day when it was fairly reasonable to suppose that increased sales would bring increased profits has passed away. The urge today is not so much for increased sales as for increased efficiency and decreased costs, so that the accountants of the industry have a heavy burden to bear, if they are to do their full share in assisting their organizations to carry on to the best advantage. To assist them in doing this, executives are asked to send their accountants to the Nineteenth Semi-Annual Convention of the Cost Association of the Paper Industry, which will be held at the Statler Hotel, Detroit, Mich., on October 20 and 21.

Announcement has already been made that the convention would extend into the third day, October 22, when a trip had been planned to one of the local mills, but unfortunately, owing to changes which are being made at the mill, it will not be convenient for this trip to be made, so the convention will be confined to two days, for which a full program has been arranged.

The following is a partial list of the subjects on which addresses will be given and the speakers who will give them:

"The Determination and Application of Machine Hour Rates in the Paper Industry," by George K. Ferguson, Watervliet Paper Co., Watervliet, Mich.

"The Distribution of Overhead Expense to Manufacturing or Production Centers," by Roy M. Springer, Cost Accountant, Bird & Son, Inc., E. Walpole, Mass.

"The Cost Accountant's Part in Reducing Manufacturing Costs," by L. C. Reynolds, Assistant to the President, American Writing Paper Co., Inc., Holyoke, Mass.

"Our Cost System," by Ralph B. Hersey, Cost Accountant, Hollingsworth & Vose Co., Boston, Mass.

"Analysis and Control of Cost Variations," by Ralph Knott, Cost Accountant, Eastern Manufacturing Co., Bangor, Me.

"What Employment Supervision Means to the Pulp and Paper Industry," by J. Norman Spawn, Employment Supervisor, Champion Fibre Co., Canton, N. C.

Non-members as well as members are cordially invited to attend this convention. Reservations should be sent direct to the manager of the Hotel Statler, Detroit, Mich., with advice to the effect that the sender intends to attend the convention to be held by the Cost Association of the Paper Industry.

Judging from reservations already made, there will be an excellent attendance at this convention. Western mills are particularly invited to send representatives to this convention; it is being held in Detroit to meet their convenience.

Any further information regarding the convention can be obtained from the Secretary-Treasurer, Cost Association of the Paper Industry, 18 East 41st Street, New York City.

New C-E Fin Furnace Catalog

The Combustion Engineering Corporation, New York, has just issued a new edition of its Fin Furnace Catalog. The text has been completely revised, and numerous illustrations, including setting drawings and plant layouts, have been added. These drawings exemplify the most modern trends in boiler and furnace design.

DRIFT

Wartime with its violent price fluctuations and lax business methods enabled out and out speculators to compete with legitimate business men.

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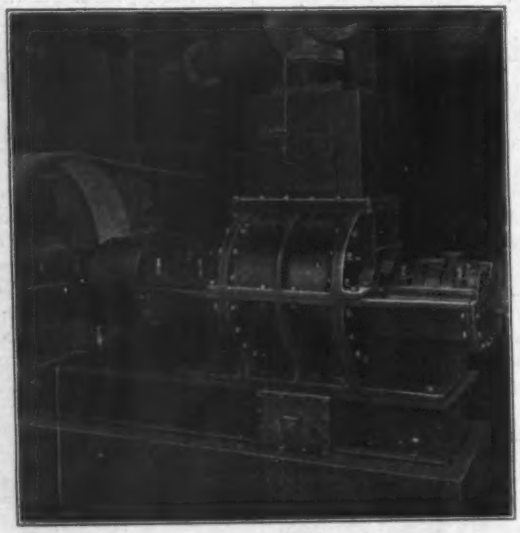

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Power Economy under Normal Operating Conditions

5" to 16" mercury is the range of suctions in at least 80% of the flat box, felt conditioner, vacuum filter, and suction roll service in paper mills. The careful manager is consequently interested in pumps that show the greatest economies under these conditions.

In this range of vacuums, most common in paper mill operation, Connersville Cycloidal Pumps use less power. Combined with their inherent simple, sturdy design, this means economy now and through many years.

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Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Air Improves Work Of Beater*

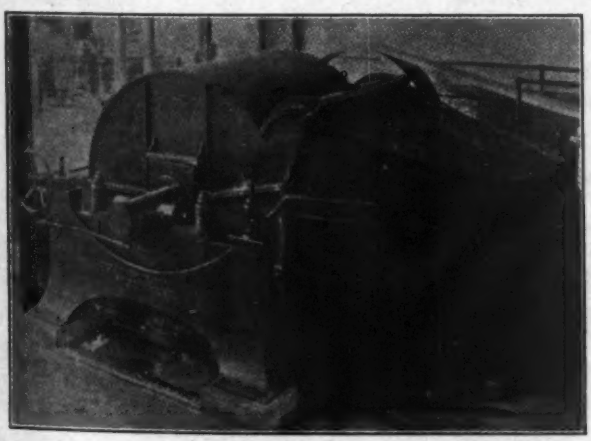
By A. M. Hoffmann

An interesting application of compressed air in paper mills is in connection with the Stuart pneumatic bedplate for beating engines. This bedplate performs all the functions of the ordinary beater bedplate and embodies several new features that are said to increase the capacity of the beating engine and to improve the quality of the paper stock. It is the invention of David Stuart, of Windsor Mills, Que., Canada, who has had 40 years of experience in the manufacture of paper.

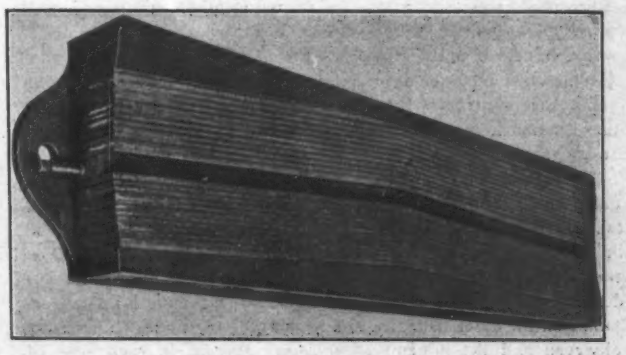
The bedplate in question is built up of steel blades set edgewise to the roll and located in the bottom of the tub underneath the roll.

Mr. Stuart's long experience with papermaking has taught him much about the science of preparing stock in the beating engine. He has learned, among other things, that for paper of good quality it is necessary that the fibers be drawn rather than cut or beaten while undergoing treatment in the beater.

Mr. Stuart's pneumatic bedplate, which is patented in the United States and in Canada, provides for a draft space between two sections of the regularly spaced steel blades; and into this space he recommends that compressed air be blown. This would call for no new equipment, as compressed air is now used for one purpose or another in most paper mills. Where this is not the case, a small vertical compressor—such as the 1-R Type 15—can be driven from the beater shaft. According to Mr. Stuart's theory, and practice has confirmed it, the draft space causes the stock to travel faster; and, by resorting to compressed air at this stage of the operations, the fibers are crossed and their relative positions disturbed—the stock coming out cool and uniform. To be more explicit, the current of air prevents the pulp from interfering with the free movement of the beater roll over the plate; it assists in the mixing of the mass; and it helps to break up pieces of "broke" or hard bunches of stock without in any way reducing the strength of the fiber.



Dilts Beater with One End of the Bedplate Just Visible Beneath the Shaft of the Beater Roll.



Stuart Pneumatic Bedplate Showing the Draft Space, Between the Sets of Steel Blades, Through Which Compressed Air is Blown.

The pneumatic bedplate, which is manufactured by the Dilts Machine works, Inc., of Fulton, N. Y., has been in service for months in paper mills in the United States and in Canada; and there seems to be no doubt about it that Mr. Stuart has hit upon a real improvement in preparing stock for papermaking.

* Compressed Air Magazine (abstracted).

R. L. Pease Leaves Knowlton Bros.

Brownsville, N. Y., October 1, 1927.—Robert L. Pease, who has served as vice president of the Knowlton Brothers Company of Watertown, for some time today became associated with the Brownsville Paper Company of this place. Mr. Pease recently tendered his resignation from Knowlton Brothers to become effective October 1.

It is reported that George F. Clark, who with Samuel F. Upham, is financially interested in the Brownsville Paper Company, plans to retire.

The Moisture Equilibrium of Egg Case Fillers, Flats and Pads

By Sidney D. Wells [1]

The moisture content of egg case packing material when it has come to equilibrium with the atmosphere surrounding it, is a point of considerable interest to the manufacturers of this material and the egg packers using it. Information on this subject is not readily accessible and for that reason series of tests were made during the winter of 1926-27 to ascertain the moisture content of egg packing material under typical conditions of storage in unheated warehouses and also under cold storage conditions. The following types of material were studied.

1. Excelsior pads
2. Holed-Tite [2] cup flats
3. White spruce fillers
4. Lime-cooked straw fillers
5. Lime-cooked straw flats
6. Original Nu-Process [3] fillers
7. Modified Nu-Process [4] fillers
8. Modified Nu-Process flats

Tests in Unheated Warehouses

The first series during the months of January and February, 1927, were made in an unheated warehouse. The object of these experiments was to ascertain the point of equilibrium in unheated warehouses typical of the surroundings in which the material would be stored until needed for the packing of eggs. The condition of the material as it went into the warehouse varied from a moisture content of 5.8 per cent for some that just came off the papermachine, to 12.2 per cent for some that was received by freight some time after it has been manufactured.

Typical samples of various types of material were put in an unheated warehouse and at the same time average samples were taken and dried to determine the moisture content. The material in the warehouse was taken out at intervals and weighed and at the same time the temperature and humidity of the warehouse was determined. Table 1 gives the weights of the material as determined on the dates indicated, the temperature and relative humidity observed and the amount of moisture present in each type of material. About forty-eight days were required for the material to come to equilibrium and the time required for each type of material seemed to be about the same. The relative humidity at the time the material came to equilibrium was 66 per cent, which happened to be a fairly close average of the relative humidity throughout the period. The moisture content of the various types of material at equilibrium was as follows:

Types	Moisture content %
Lime-cooked straw fillers	12.6
Lime-cooked straw flats	13.0
White spruce fillers	13.0
Original Nu-Process fillers	11.0
Modified N-P fillers	11.0
Modified N-P flats	11.1

The moisture content of excelsior pads when taken out of similar storage at another time was 15 per cent. The moisture content of cup flats taken out of similar storage was 12.3 per cent.

Tests in Cold Storage

The second series of tests was made under cold storage conditions during the latter part of December. The various types of material were weighed periodically and the temperature and humidity in the cold storage room were observed. The temperature in the room varied from 27.75 to 33.5 degrees F. during the period. Most of the observations, however, were very close to 32 degrees F. The relative humidity varied from 75 to 89 per cent. At the time the material had come to equilibrium, however, the relative humidity was 80 per cent. Table 2 gives the results of the weighings made at the various dates indicated for the various types of material under observation. The moisture content also in per cent is indicated.

The moisture content of the various types of material in cold storage was as follows:

Types	Moisture content %
Excelsior pads	20.6
Cup flats	23.6
Lime-cooked straw fillers	25.0
Lime-cooked straw flats	22.4
White spruce fillers	25.0
Original Nu-Process fillers	22.3
Modified N-P fillers	22.8
Modified N-P flats	21.8

The various types of material as a whole required approximately two weeks to come to equilibiurm under cold storage conditions. The excelsior pads, however, came to equilibrium much more rapidly and only required one week. The modified Nu-Process fillers and flats required only about one week. They were put in cold storage about one week after the other material. On account

[1] Member TAPPI; Director of Laboratory, Paper Mill Laboratories, Quincy, Ill.

[2] Holed-Tite cup flats are molded products made on a special wet machine from over issue newspaper stock under the Mann and Mapes patents.

[3] Original Nu-Process fillers are prepared from straw cooked with a mixture of sodium carbonate and sulphite as described in the paper by Rue and Monsson which appeared in the Paper Trade Journal of Oct. 8 and Nov. 12, 1925. Patent application covering this process has been filed.

[4] The Modified Nu-Process fillers were made from straw cooked with a mixture of sodium carbonate and elemental sulphur as described in United States pat. 1,626,171, issued April 26, 1927.

TABLE 1

UNHEATED WAREHOUSE

Date:	Relative humidity	Lime-cooked fillers Wt.	Lime-cooked fillers Moisture content	Lime-cooked fillers Wt.	Lime-cooked fillers Moisture content	Lime-cooked flats Wt.	Lime-cooked flats Moisture content	White fillers Wt.	White fillers Moisture content	Orig. Nu-Process fillers Wt.	Orig. Nu-Process fillers Moisture content	Mod. Nu-Process fillers Wt.	Mod. Nu-Process fillers Moisture content	Mod. Nu-Process fillers Wt.	Mod. Nu-Process fillers Moisture content	Temperature
1926—	%	g.	%	g.	%	g.	%	g.	%	g.	%	g.	%	g.	%	°F.
Dec. 30		1079	10.7	1077.5	10.1	505	10.4	1141	12.2	1122.5	5.9	1058.5	6.5	446	5.8	
Dec. 31	35			1058	8.0			1104.5	8.6							65
1927—																
Jan. 3		1083.5	11.1	1079.5	10.3	507.5	11.0	1122	10.3	1157.5	9.0	1085.0	9.1	454.5	7.9	
Jan. 5		1086.5	11.3	1081.5	10.5	508.5	11.2	1130.5	11.1	1161	9.4	1086.5	9.2	459	9.1	
Jan. 7	55.5	1085.5	11.2	1082	10.7	509.5	11.3	1133.5	11.6	1161.5	9.5	1087	9.3	461	9.3	46.5
Jan. 10	52	1086.5	11.3	1085	11.0	510.0	11.5	1135	11.7	1162.5	9.6	1088.5	9.5	461.5	9.7	42.5
Jan. 12	82.5	1086.5	11.3	1085	11.0	511.0	11.7	1136.5	11.8	1162	9.5	1090	9.7	462	9.9	45.5
Jan. 13	67	1089	11.6	1088	11.2	513.0	12.2	1139.5	12.0	1163.5	9.7	1092.5	10.0	464	10.2	43
Jan. 14	75	1089.5	11.7	1088.5	11.3	514.0	12.3	1141.0	12.3	1163.5	9.8	1092.5	10.0	465.5	10.8	39.5
Jan. 27	61	1095.5	12.3	1093.5	11.8	519.5	13.7	1148	12.8	1176	10.7	1100	10.7	469.5	11.6	35.25
Jan. 29	68	1096.5	12.4	1094.5	11.9	520.0	13.8	1150	13.1	1177.5	11.0	1101.5	10.9	470	11.7	50.5
Feb. 17	66	1097.5	12.6	1095	12.0	516.5	13.0	1149.5	13.0	1177	10.9	1103.5	11.0	467	11.1	53
Feb. 21		1038	6.3	1038.5	6.1	489.0	7.0	1078	6.0	1116	5.1	1045.5	5.1	444.5	5.7	
Oven dry	0	975	0.0	979	0.0	457	0.0	1017	0.0	1061	0.0	994	0.0	421	0.0	212

TABLE 2
COLD STORAGE

Date 1926—	Relative humidity %	Excelsior pads Wt. g.	Excelsior pads Moisture cont. %	Cupped flats Wt. g.	Cupped flats Moisture cont. %	White fillers Wt. g.	White fillers Moisture cont. %	Lime-cooked fillers Wt. g.	Lime-cooked fillers Moisture cont. %	Lime-cooked flats Wt. g.	Lime-cooked flats Moisture cont. %	Orig. Nu-Process fillers Wt. g.	Orig. Nu-Process fillers Moisture cont. %	Mod. Nu-Process fillers Wt. g.	Mod. Nu-Process fillers Moisture cont. %	Mod. Nu-Process flats Wt. g.	Mod. Nu-Process flats Moisture cont. %	Temp. °F.	Time
Dec. 13	19	190	15.0	278.5	12.3	569	13.1	575.5	14.9	283	8.7	581	10.7					73	
Oven dry	0	165	0.0	248	0.0	502	0.0	500.5	0.0	260.5	0.0	526	0.0					220	
Dec. 13 Storage		182	15.0	278.5	12.3	569	13.1	573	14.9	284	8.7	582	10.7						
Dec. 13	89																	31.5	6:00 p.m.
Dec. 14	75																	33	8:15 a.m.
	84	185	17.0	284.5	14.8	596	18.2	592	18.6	293.5	12.3	616.5	17.1					35	6:00 p.m.
Dec. 15	77																	35	8:00 a.m.
	75	187.5	18.8	289	16.7	609.5	21.1	605	21.2	299	14.5	629	19.7					30.75	5:30 p.m.
Dec. 16	78																	30.25	8:00 a.m.
	78	188.0	19.0	291	17.4	612	21.6	605	21.3	302	15.7	629	19.7					31	5:20 p.m.
Dec. 17	79	188.5	19.3	292	17.8	613	22.0	607.5	21.8	304.5	16.7	630.5	19.9					32	5:30 p.m.
Dec. 18	75	189.0	19.7	294	18.8	616	22.3	609	21.9	306.5	17.3	632.5	20.2					31.5	5:30 p.m.
Dec. 19	83	189.0	19.7	296	19.3	620.5	23.2	613	22.8	308	17.9	637	21.2	548.5	11.0	203	5.9	31.5	3:15 p.m.
Dec. 20	81	190.0	20.2	298	20.2	623.5	23.9	616	23.2	310	16.7	639	21.5	494	0.0	191.5	0.0	33.75	5:30 p.m.
Dec. 21	76	190.5	20.6	299	20.6	625	24.2	618.5	23.8	311	19.1	641	21.9	551.5	11.0	205	5.9	27.75	6:00 p.m.
Dec. 22	76	190.5	20.6	299.5	20.8	626.5	24.4	619.5	24.0	312.5	19.7	642	22.0	596	20.0	227.5	17.5	31.75	6:00 p.m.
Dec. 23	78			301	21.3	626	24.3	621	24.3	314	20.1	639.5	21.6	598	20.5	235.5	21.7	30	6:00 p.m.
Dec. 24	82			301.5	21.5	625	24.2	619.5	24.0	315	20.4	640	21.8	601.5	21.2	234	20.9	36	6:00 p.m.
Dec. 27	85			305	23.0	629.5	25.2	624.5	25.1	319	22.1	645	22.7	609.5	22.8	236.5	22.2	33.5	5:30 p.m.
Dec. 28	89			305	22.8	629	25.1	622	24.7	319	22.2	643	22.3	609	22.7	236	21.7	31	6:00 p.m.
Dec. 29	81			305	23.0	629	25.0	621	24.3	319.5	22.3	642	22.1	609	22.8	236	21.8	35	6:00 p.m.
Dec. 31	80			306	23.6	628	24.7	624	25.0	320	22.4	642.5	22.2	609	22.8	236	21.8	32.75	9:00 a.m.

of being surrounded with material that was already almost at equilibrium, however, they came to equilibrium much more rapidly than they otherwise would.

The amount of water in the packing material when it is at equilibrium under various conditions is of interest. In Table 3 is given the amount of water per case of eggs in the packing material after equilibrium in the unheated storehouse had been reached. In Table 4 is given the amount of water per case of eggs in the packing material after equilibrium had been reached in cold storage.

From a study of the tables it is evident that the combination of cup flats and Nu-Process fillers contain the least amount of water under both unheated warehouse and cold storage conditions. Under cold storage conditions the amount of water in Nu-Process fillers is about one ounce less per case than that contained in white spruce fillers or lime-cooked fillers. The amount of water contained in the cup flats is from one to two and one-half ounces less per case than any combination of pads and plain flats. The Nu-Process flats, however, contain about 3 per cent less water than either white spruce flats or lime cooked straw flats. The low water absorption by the Nu-Process fillers and flats is a remarkable feature which probably explains the greater strength, stiffness, and toughness of this material under the conditions of cold storage. In the case of cupped flats, the small amount of water contained therein is a result of the lightness of the flats and the small amount of material required in their structure.

TABLE 3
MOISTURE ABSORBED BY PACKING MATERIAL PER CASE OF EGGS IN UNHEATED WAREHOUSE

			With white spruce fillers oz.	With lime-cooked straw fillers oz.	With original Nu-Process fillers oz.	With modified Nu-Process fillers oz.
4 Excelsior pads	16	oz.	2.16	2.16	2.16	2.16
8 flats	12	oz.	1.40	1.41	1.20	1.20
Total	28	oz.	3.56	3.57	3.36	3.36
6 Excelsior pads	24	oz.	3.24	3.24	3.24	3.24
6 flats	9	oz.	1.01	1.15	.90	.90
Total	33	oz.	4.25	4.29	4.14	4.14
16 Cupped flats	20	oz.	2.22	2.22	2.22	2.22
14 Cupped flats	17.5	oz.	1.94	1.94	1.94	1.94
4 Excelsior pads	16	oz.	2.16	2.16	2.16	2.16
8 Cupped flats	10	oz.	1.11	1.11	1.11	1.11
Total	26	oz.	3.27	3.27	3.27	3.27
10 Fillers	38.75	oz.	4.53	4.40	3.85	3.85

Summary

The leading points demonstrated in the tests conducted as described above are the following:—

1. Egg-packing material came to moisture equilibrium in an unheated warehouse in a period of about forty-eight days. Only about fourteen days were required, however, to bring it to nine-tenths of its final moisture content.

2. Under typical cold storage conditions the time required to come to equilibrium was only two weeks.

3. Approximately twice as much water was held by the material under the cold storage conditions as when at equilibrium in the unheated warehouse.

4. Lime-cooked straw and spruce groundwood had practically the same moisture content when in equilibrium. Nu-Process stock contained 3 per cent less.

5. The pack containing the least water was the combination of cupped flats and Nu-Process fillers. The first on account of their low weight and the second because of their relatively low attraction of moisture.

6. The moisture content of the combination mentioned above at equilibrium in cold storage was 12 ounces as compared with 15 ounces with white fillers, flats and pads.

TABLE 4
MOISTURE ABSORBED BY PACKING MATERIAL PER CASE OF EGGS IN COLD STORAGE

			With white spruce fillers oz.	With lime-cooked straw fillers oz.	With original Nu-Process fillers oz.	With modified Nu-Process fillers oz.
4 Excelsior pads	16	oz.	2.97	2.97	2.97	2.97
8 flats	12	oz.	2.42	2.42	2.36	2.36
Total	28	oz.	5.39	5.39	5.33	5.33
6 Excelsior pads	24	oz.	4.45	4.45	4.45	4.45
6 flats	9	oz.	1.82	1.82	1.77	1.77
Total	33	oz.	6.27	6.27	6.22	6.22
16 Cupped flats	20	oz.	4.25	4.25	4.25	4.25
14 Cupped flats	17.5	oz.	3.72	3.72	3.72	3.72
8 Cupped flats	10	oz.	2.13	2.13	2.13	2.13
4 Excelsior pads	16	oz.	2.97	2.97	2.97	2.97
Total	26	oz.	5.10	5.10	5.10	5.10
10 Fillers	38.75	oz.	8.70	8.70	7.77	7.93

Paper Index Number Higher

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 5, 1927.—The paper industry is given an August production index number of 111 compared with 104 for July and 122 for August of last year, taking 1919 at 100 per cent, by the Department of Commerce.

Sulphite Pulp from Spruce

By Dr. Donald E. Cable

(Continued from last week)

CHAPTER III

Effect of Cooking Spruce With the Bases Calcium, Magnesium, Calcium-Magnesium Mixture, Sodium and Ammonium

As pointed out in Chapter 1, there has been published by Miller and Swanson some very valuable contributions on the chemistry of the sulphite process. Despite the vast amount of very valuable work which has been done at the U. S. Forest Products Laboratory on the sulphite process there is one variable in the process which has been given very little attention, so far as information published up to the present time is concerned. The variable is that involving the kind of base used in preparing the sulphite cooking liquor.

Nearly all the sulphite cooks made at the Forest Products Laboratory have been those in which calcium has been the only base present in the cooking acid. This, we believe, has placed undue emphasis on a type of cooking acid which is by no means universally used commercially in this country or abroad. A number of mills in United States and Canada can be mentioned in which a dolomitic type of lime has been used in the preparation of the sulphite cooking acid. One sulphite pulp mill was seen in England several years ago by two representatives of the Oxford Paper Company in which sodium was used as the base.

The inventor of the sulphite process, B. C. Tilghman, recognized the possibility of using not only calcium bisulphite in solution with sulphurous acid for preparing pulp from wood but he must have succeeded in obtaining wood pulp by means of liquors containing other kinds of bisulphites and even by means of sulphurous acid, containing no bisulphites or salts of any kind.

This experience is reflected in one of the claims of his first American patent[34] which reads as follows:

"The process of treating vegetable substances which contain fibers with a solution of sulphurous acid in water either with or without the addition of sulphites, or other salts of equivalent chemical properties, as above explained, heated in a vessel under pressure, to a temperature sufficient to cause it to dissolve the intercellular incrusting or cementing constituents of said vegetable substances, so as to leave the undissolved product in a fibrous state, suitable for the manufacture of paper, paper pulp, cellulose or fibers, or for other purposes, according to the natures of the material employed."

The specifications and other claims for this patent of Tilghman's is given and discussed on pp. 179-182 of Griffin and Little's book, "The Chemistry of Paper Making."

These authors make the following significant remarks on p. 184:

"Bisulphite of lime is a very unstable salt which upon being merely heated decomposes; one half of the acid being set free. The resulting monosulphite is practically insoluble, so that when this decomposition occurs in the boiler this latter salt is precipitated throughout the pulp, from which it is difficult to remove by washing. Where lime liquor is used, there is, therefore, more pressure (gas) in the digester, and the resulting pulp is comparatively harsh, hard and transparent. It is also more difficult to make a straight lime liquor of high test than it is to prepare similar liquors from magnesia or soda, but on account of the insolubility of the sulphate of lime the former liquors never contain more than three-tenths per cent of sulphuric acid, while soda or magnesia liquors may contain an indefinite amount. In the case of lime liquors, any excess of sulphate over the amount given is precipitated and may be settled out.

" Bisulphite of magnesia is somewhat more stable than the corresponding lime salt, and its action on the incrusting matter is milder, but even more effectual. The sulphates or monosulphites which may be present in magnesia liquors remain in solution and are easily washed out from the pulp. *The resulting product is much softer and whiter than any which is ordinarily made with lime* without some subsequent treatment. *These desirable qualities of magnesia are possessed in a still higher degree by soda.* Sodium bisulphite is so permanent that it may be easily obtained and preserved in the crystalline form. The gas has so strong an affinity for the base that liquors of 35 degrees Baume may be made without difficulty. Both the sulphite and sulphate of soda are very soluble, and there is, therefore, no precipitation either in the liquor apparatus or in the digester. Pulp made with soda liquor is white and soft, and almost entirely free from last portions of incrusting matter.'"

According to Sutermeister,[35] "Of the available bases for making sulphite liquor soda has the advantage of forming a stable bisulphite and the cellulose prepared from such liquor is very pure and easy to bleach. Magnesia possesses these qualities, but in a lesser degree, while lime is likely to make the fiber hard and harsh from formation of calcium monosulphite."

Without doubt the best contribution to our knowledge of the physical chemistry of calcium, sodium and ammonium bisulphite solutions and free sulphurous acid is that[36] of a Japanese chemist, T. Marsawa. His observations are of such importance that the abstract of his article as it appeared in Paper March 27, 1918, will be repeated as follows:

"Solutions of sulphurous acid undergo considerable decomposition even at 130 degrees C., a solution containing 0.6 gm.-mol. per liter of H_2SO_3 being decomposed to the extent of 25 per cent. in thirteen hours at that temperature, or in two hours at 150 degrees C. After six hours at 150 degrees C. about 42 per cent. of the acid is decomposed, mainly into sulphur and sulphuric acid, with a small amount of thio-sulphuric acid. The addition of selenium has no appreciable influence on the rate of decomposition.

"A solution of sodium or ammonium bisulphite is very stable, a solution containing 0.6 gm.-mol. per liter, for example, being decomposed only to the extent of a few per cent after six hours at 150 degrees C. and of about 14 per cent at 170 degrees C., but in no case is sulphur separated. Below 150 degrees C. the addition of selenium has practically no influence.

"A solution of sulphurous acid containing sodium or ammonium bisulphite is fairly stable below 150 degrees C. and a solution containing 0.3 gm.-mol. per liter of each compound undergoes only about 10 per cent of decomposition after six hours heating at that temperature, while no sulphur separates. The rate of decomposition increases rapidly with the rise of temperature, the decomposition being practicaly complete after six hours heating at 170 degrees C.

"Selenium has a pronounced influence on the decomposition of the mixture, so that when heated for six hours at 150 degrees C., with 0.01 gm. of selenium per liter, it is decomposed to the extent of over 80 per cent., while a large amount of sulphur separates. Under parallel conditions the stability of the mixture decreases with the rise in the ratio of free sulphurous acid to bisulphite, independently of the presence or absence of selenium.

"If a mixture of H_2SO_3 and $Ca(HSO_3)_2$ of the composition

[34] U. S. Patent No. 70,485 (Nov. 5, 1867), "Treating Vegetable Substances for Making Paper Pulp." Brit. Pat. 2,924.

[35] Chemistry of Pulp and Paper Making, p. 161.

[36] Jour. of Chem. Industry, Tokyo 20. pp. 737-773 (1917); Abstract in Jour. Soc. Chem. Ind. 37, No. 3, pp. 52A & 53A (Feb. 15, 1918); Also in Paper 22, No. 3, p. 21 (March 27, 1918).

usually employed in sulphite pulp mills is heated in a closed vessel calcium sulphite separates. To prevent this, the composition of the mixture must be so regulated that the ratio—H_2SO_3 : 2 $Ca(HSO_3)_2$ exceeds a certain critical point. Other conditions being similar, this value depends upon the temperature and increases with rise of temperature. For example, in the case of a solution containing 0.13 gm.-mol. per liter of calcium, the critical values at 100 degrees C. were 1.1 and 1.6 respectively, when the volume of the solution was three-quarters that of the vessel.

"The conditions of decomposition of the mixture of calcium bisulphite and sulphuous acid are similar to those described for sodium and ammonium bisulphites. In course of time the calcium sulphite which first separates, as mentioned above, redissolves, while the calcium sulphate is formed as a new deposit. The primary decomposition of sulphurous acid probably occurs in its dissociated part, HSO_3' and is accelerated by hydrogen ions, and the stability of bisulphite solution, notwithstanding its high HSO_3', content must be attributed to the want of an accelerator of the decomposition, owing to the very slight concentration of hydrogen ions.

"The action of selenium may be explained by the assumption that it forms with bisulphite or more probably with HSO_3', an unknown compound which in the presence of hydrogen ions is exceedingly unstable."

So far as we have been able to discover the only experimental data which presents results from a series of sulphite treatments of one kind of wood, using two or more kinds of bases in successive acids is that in an unpublished bachelor's thesis by D. G. Magill in 1913 at the University of Wisconsin.

Magill conducted a series of cooks in which he treated successive samples of spruce sawdust with various sulphite liquors, containing individually the following elements for the basic constituent, potassium, sodium, calcium, barium, strontium and zinc. He also conducted a series of cooks in which he treated successive samples of pine sawdust with various sulphite liquors containing the following elements and ammonia for the basic constituent, nickel, cobalt, iron, magnesium, manganese, lead and cadmium.

His method of experimentation in every case was as follows:

"Two hundred and fifty cc. of the diluted solutions were introduced into strong glass bottles, having wired glass stoppers and 40 grams of wood, either pine or spruce in the shape of sawdust, was added to each bottle. These bottles were then put into a water bath and heated for about three hours at a time. At the beginning of each period the bottles were well shaken. After about 40 hours of slow digestion, the liquid commenced to turn dark, showing that the materials were being extracted."

Typical record sheets in his work were as follows:

Base in cooking liquor—Sodium.
Composition of cooking liquor—
Total SO_2 = 5.24%
Combined SO_2 = 2.01%
40 grams of spruce—45 hours at 100 degrees C.
Spent liquor—0.10% total SO_2. Weight of pulp—31 grams.
Remarks—The pulp was rather poor, but well bleached. Spent liquor was a light brown.

Base in cooking liquor—Calcium.
Composition of cooking liquor—
Total SO_2 = 4.99%
Combined SO_2 = 1.15%
40 grams of spruce—cooked at 100 degrees C. for 42 hours.
Spent liquor—0.05% total SO_2. Weight of pulp—19 grams.
Remarks—The pulp was good and the fiber well preserved and distinct. The spent liquor was dark brown.

The work done by Magill is worthy of very high praise when one considers the very simple kind of apparatus with which he had to work. The research work described in this thesis, simply tackles this problem in a manner very similar to Magill's with the added advantage in our favor that the wood used was in the chipped condition rather than being in the form of sawdust; we used 65 grams of wood instead of 40 grams and most important of all —we were able to conduct three cooks at a time and were able to maintain temperature and pressure conditions in the digester which reproduces those conditions in a well regulated commercial sulphite digester.

It must be admitted that the "strong glass bottles, having wired glass stoppers" is very inadequate for preventing the escape of sulphur dioxide gas, liberated in the reaction bottle, during the process of heating the contents of the bottle up to 100 degrees C. Furthermore the heating of his cooking bottle at 100 degrees C. for 40 hours or more would not represent commercial methods of sulphite cooking either by the quick cook or by the Mitscherlich methods of cooking. In a roughly qualitative but not quantitative way our experimental observations confirm the findings of Magill so far as our experiments parallel each others.

Magnesium in Sulphite Cooking Liquor

Apparently the use of a straight magnesium bisulphite cooking liquor is receiving very serious consideration in European and Scandanavian countries. On Dec. 8, 1924, a Norwegian patent (No. 40,516) relating to—"Magnesium sulphite liquor for cellulose" was granted to the A/S Thunes Mek. Verksted and E. F. Heyerdahl. According to this patent,—minerals containing calcium and magnesium are burned and dry slaked and treated with gaseous SO_2 and then with aqueous SO_2 at such a temperature that the resulting liquor will contain mainly magnesium compounds.

On that same date the A/S Thunes Mek. Verksted was granted a patent (No. 40,517), covering the "Evaluation and regeneration of magnesium sulphite waste liquor." In the latter process the waste liquor is evaporated and burned; the expelled SO_2 and the MgO in the ashes are used for the production of fresh liquor or for other purposes.

Schwalbe and Berndt published an article[27] in which is given a review, essentially on patents, dealing with the manufacture of $Mg(HSO_3)_2$ cooking liquor. Directions are given for its manufacture from $MgCl_2$ or $MgSO_4$ or waste liquors from the potash industry.

Schwalbe and Berndt have also presented[28] another contribution entitled, "Oxidizability of Magnesium and Calcium Bisulphite Solutions and Their Behavior on Heating Under Pressure."

Wenzl wrote an article on "Behavior of Calcium and Magnesium Bisulphite Liquors on Heating Under Pressure"[29] in which he interprets the results of Schwalbe and Berndt on the behavior of $Ca(HSO_3)_2$ and $Mg(HSO_3)_2$ liquors on heating under pressure from a physico-chemical standpoint.

Schmidt has written on the subject, "Behavior of calcium and magnesium bisulphite liquors on heating under pressure."[30]

A later article[31] by Schwalbe and Berndt states that the magnesium bisulphite—sulphite equilibrim compared with that of the corresponding calcium salts, shows that there is a greater tendency to form magnesium bisulphite compound.

Schwalbe contributed on July 19, 1925, a very instructive article[32] entitled, "Manufacture of sulphite pulp with fresh liquors containing magnesia." An abstract of this article which appeared in Chemical Abstracts 19, p. 3015 warrants repeating in full:

"Magnesium hydrate, from magnesium chloride and calcium hydrate is converted into magnesium bisulphite in a tower system. It is not as readily oxidized as the calcium bisulphite. At 150 degrees C. 50 per cent. calcium sulphite precipitates from the bisulphite liquor, but only 10 per cent separates from a mixture of calcium and magnesium bisulphites. Cooking experiments have demonstrated that with an all calcium liquor, 44 per cent. of the calcium separates and is precipitated on the fibers; with a mixed liquor 22 per cent separates and with a liquor consisting entirely of the magnesium compound 0.4 per cent. of the base is precipitated. Magnesia containing liquors require 1 to 2 hours longer cooking

[27] "The Manufacture of Sulphite Cooking Liquor Containing Magnesium," Papier-Fabr. 22, No. 24A, Festheft, pp. 65-71 (June 17, 1924); Pulp and Paper Mag. Can. 23, No. 45, 1182-1185 (Oct. 15, 1925).
[28] Papierfabr. 23, No. 1, 1-6 (Jan. 4, 1925).
[29] Wochbl. Papierfabr. 56, 256-259 (Feb. 28, 1925); C. A. 19, 2131.
[30] Wochbl. Papierfabr. 56, No. 16, 485-488 (April 18, 1925).
[31] "Behavior of Calcium and Magnesium Bisulphite Liquors on Heating Under Pressure." Wochbl. Papierfabr. 56, 675-676 (May 30, 1925).
[32] Papier-Fabr. 23, 461-466 (July 19, 1925); Wochbl. Papierfabr. 56, No. 26, 189-790 (June 27, 1925); Zellstoff und Papier 5, No. 7, 251-252 (July, 1925); C. A. 19, 3015.

time, and yield waste liquors containing only 0.5 to 0.9 per cent. sulphur dioxide. The SO_2 consumption per 100 parts of wood is 16 grams with calcium liquor, 15 grams with magnesium-calcium liquors, 13 grams with magnesium liquors and 16 grams with a liquor high in magnesia content. The yields were about 44 per cent., except with strong magnesia liquor, when the value was 52 per cent. The copper number of the pulps was 2.3 to 2.8; the baryta resistance was 84 per cent. The pentosan content of the magnesium cook was 6.3 per cent. and with the calcium cook, 4.6 per cent. The lignin content varied from 1.2 to 2.3 per cent. The pulp strength increased with the magnesium content of the cooking acid."

Berndt has published[83] a very interesting and complete literature survey on the subject, "The Use of magnesium containing cooking liquors, especially those rich in bases."

Schwalbe and Berndt showed in a still more recent article[84] that with (1) calcium, (2) magnesium and (3) calcium-magnesium bisulphite cooking acids, no difference in the absorption of spruce wood was observed over a period of 8 hours at 60-70 degrees C. when comparing the penetration rates of these three kinds of sulphite cooking acids.

Rue has published[85] a very complete literature survey on the pulping of wood with magnesium, ammonium and sodium sulphites and bisulphites by both acid and alkaline pulping processes.

Dolomitic Sulphite Cooking Liquor

During recent years a rather large number of mills have turned from the milk of lime methods of preparing sulphite cooking liquor to the limestone tower system. In at least one case where a soda or sulphate pulp mill is run in conjunction with the sulphite mill a change has been made from the manufacture of a calcium-magnesium bisulphite acid (taking dolomitic lime as the raw material or alkali) to the manufacture of a high calcium bisulphite liquor[86] using washed calcium carbonate sludge from the alkali pulp mill and treating it with SO_2 gas in a mnner very similar to the process for producing cooking acid from dolomitic milk of lime.

Since the tower method of making sulphite cooking liquor works much more successfully with a high calcium limestone that it does with a dolomitic limestone it is seen that in this country at least we find the high calcium bisulphite type of acid in more general use than the dolomitic type.

The chief cause for this widespread popularity of the limestone tower method of acid making is probably due very largely to economic reasons. Thus, H. F. Obermans published an article[87] in 1918 entitled, "Advantages of Towers in Acid Making,, in which he gives "A Comparison Between the Three Tank Milk of Lime System and the Tower System." He claims a financial advantage of the latter system for a 100 ton pulp mill per annum for the following items amounting to:

On power	$10,000 to $12,000
On sulphur	$20,000 to $25,000
On lime or stone	$12,000 to $15,000

Heijne presented an article[88] on "Absorption Systems" in which he makes a comparison of the tower and milk of lime systems for the preparation of sulphite cooking liquor, from which the author considers that the latter is superior to the former, especially from the standpoint of quality of the pulp. This is attributed to the possibility of making a high magnesium lime liquor which cannot be made in limestone towers.

Dr. J. S. Bates in contributing[89] to the "Round-Table Discussion of Sulphite Cooking" (Held on June 3rd, 1926, at Montreal, Canada) states, "We formerly used straight magnesium lime with its associated high cost. Then we worked out a scheme of purifying the green liquor, used in the kraft mill, thereby producing purified calcium carbonate sludge." The mill is now using this sludge for the preparation of the sulphite cooking acid in place of the magnesia lime. Bates makes the significant remark, "What struck me was that there was little measurable difference in the sulphite pulp by changing from straight magnesium lime to calcium carbonate sludge."

Our experimental data on the cooking of white spruce as will be seen in the latter part of this chapter checks very well with the observation of Bates, contrary to the views expressed by Heijne. It must be kept in mind, however, that this conclusion can only be true when speaking of the standard method followed in our work for varying the digester temperature and pressure. We are convinced that by following a less satisfactory set of temperature and pressure curves we would have grounds for agreement with Heijne.

In other words it is easier to get a more destructive action with pulp cooked with a straight calcium bisulphite cooking acid than one cooked with a dolomitic acid. By this is meant that the yield of pulp cooked with calcium as base will be measurably lower than the yield of pulp cooked with a dolomitic acid and the latter will in turn be lower than the yield of pulp from straight magnesium acid, *if conditions of temperature or pressure or both are not maintained according to a schedule which experience has taught us is best suited for the production of sulphite pulp from white spruce.*

Sodium in Sulphite Cooking Liquor

One of the most promising commercial developments in the field of sulphite pulp manufacture appears to be the development of economical methods for producing a sulphite cooking acid in which sodium is used as the sole base. Certain woods are known to give a very satisfactory pulp by the sulphite process, having sodium for the base, which fail miserably to give a good pulp by the sulphite process in which calcium is used as the base.

This is at least true of highly resinous pines such as longleaf pine and western yellow pine.

McKee and Cable have shown[90] that although longleaf pine sapwood will reduce to a good pulp with a calcium bisulphite cooking acid the longleaf pine heartwood even when freed of resins will give a very dark colored product, containing numerous woody fragments, when cooked with such a liquor. However, if sodium bisulphite or ammonium bisulphite is substituted for the calcium bisulphite cooking liquor a very satisfactory pulp is obtained from both heartwood and sapwood of this species. Work since done by the writer on the sulphite cooking of western yellow pine (*Pinus ponderosa*) which has been freed of resins by low temperature extraction leads to essentially the same conclusion.

Even with spruce we have found the pulp quality distinctly better when prepared from a sodium cooking acid than when prepared from one with calcium or magnesium as the base. Our data indicates that the three kinds of cooking liquor give about the same pulp yields with white spruce with a bleach consumption slightly favoring the sodium bisulphite pulp. Though we have made no comparative strength tests, we are of the opinion that the fibers of the latter are measurably superior as to strength, flexibility and other important papermaking characteristics.

In order for a commercial process, using sodium by the sulphite as well as by the soda or sulphate methods for reducing wood to pulp, to be successful it is obviously essential that some economical means be provided for recovering the sodium.

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[83] Papier-Fabr. 24, 233-238 (April 18, 1926); C. A. 20, 2748.
[84] Papier-Fabr. 24, 250-253 (April 25, 1926); C. A. 20, 2747.
[85] "Soluble sulphites and their bisulphites in the pulping of wood. A review of the literature." Paper Trade Jour. 81, No. 16, 54-56 (Oct. 15, 1925); Tech. Assoc. Papers 9, 137-139 (June, 1926).
[86] "Utilization of Lime Sludge," by J. S. Bates, Pulp & Paper Mag. of Canada, International No., 137-139 (Feb., 1927).
[87] Paper 21, No. 23, pp. 100 and 102 (Feb. 13, 1918).
[88] Pulp & Paper Mag. Can. 23, 551-553 (May 21, 1925); C. A. 19, 2131.
[89] Pulp & Paper Mag. Can. 24, pp. 813-814 (July 15, 1926).
[90] "Liquid sulphur dioxide process for sulphite pulp. III. Character of pulp obtained from extracted longleaf pine chips." Paper Trade Jour. 80, No. 17, 41-46 (April 23, 1925); C. A. 19, 1947.

Clifford in an article[41] on "Some Economical Aspects of Combined Sulphate and Sulphite Operation" was about the first to suggest a solution for this problem, particularly where a sulphate mill is run in conjunction with the sulphite mill.

Clifford says, "A number of experiments have been conducted and all authorities agree that *pulp cooked by the sulphite process, using sodium as a base instead of lime, will bleach far more easily, and is of better quality than where lime is used as the base.* The economy effected in bleaching is very great indeed, as spruce cooked by the sulphite process, using lime as a base usually requires about 14 to 16 per cent bleach; when cooked by the sulphite process and soda is used as the base, the amount of bleach required is around 8 per cent. These savings also apply in the case of hemlock, requiring normally around 17 to 18 per cent, and when cooked by the sulphite process with soda as the base the bleach consumption is around 10 per cent. In addition to these savings, the operation is much simplified, as delays due to liming of pulps and all other troubles caused by lime with which every sulphite superintendent is familiar, are absolutely eliminated."

Although our experimental data does not point to such a large saving in bleach consumption as he reported in comparing the quality of spruce pulp, cooked with the sodium cooking liquor with that cooked in the usual way with a straight calcium liquor, still this discrepancy might have been due to differences in our experimental equipment or methods of cooking.

Richter has invented processes[42] and recovery methods of value in working with a sulphite mill, using sodium as a base. Alfthan[43] proposes using in the sulphite process the usual calcium bisulphite liquor to which a relatively small proportion of soda has been added.

Rinnman in his article, "Production of sulphite pulp from resinous woods"[44] states, "Bisulphite of lime can be used (for the sulphite cooking acid) as at present, but *better results are obtained with sodium bisulphite.*"

Beveridge (of Richmond, Va.) was granted on Nov. 10, 1925, a patent[45] on a "Process of Recovering Sodium-Acid Sulphite from the Waste Liquors of the Sodium-Acid-Sulphite Pulp Process."

Hansen has presented[46] a very excellent literature survey on the use of alkalies (particularly sodium and ammonium) as the base material in sulphite cooking acids.

Hägglund has written on the subject, "Digestion of Spruce with Sodium Bisulphite."[47] In his article the cooking liquor appears to have no sulphur dioxide in excess of that required to form bisulphite.

Ammonium In Sulphite Cooking Liquor

The first suggestion of a modified sulphite process in which ammonium serves as the sole base in the cooking liquor is represented by the patent[48] of Sammet and Merrill in which one of their claims is "a process for segregating fibers or cellulose from fibrous or cellulose containing materials by subjecting the materials to the action of the sulphur dioxide, ammonia and steam in a gaseous state, substantially as specified."

In 1917 Marusawa was granted patents[49] for a process, involving the manufacture of paper pulp from vegetable fibrous materials, in which a cooking liquor, containing NH_4HSO_3 together with sulphurous acid or a soluble sulphite, is used. The acidity of the solution is maintained at 0.4 to 0.8 normal.

Recently Cross was given a patent[50] in which one of his typical claims is, "A sulphurous acid process for resolving wood substance, which process consists in heating the wood substance with an aqueous sulphurous acid solution to which has been added a proportion of ammonia amounting to between 0.1 and 0.5 per cent. of the weight of the digestion liquor."

Experimental Results

Table 3 contains detailed information regarding each of the fourteen sulphite cooks involved in this chapter. Although six (Nos. 141, 142, 152, 153, 174 and 175) of these fourteen cooks were described in the previous chapter they are again tabulated in this one, because they aid in giving a well rounded picture of

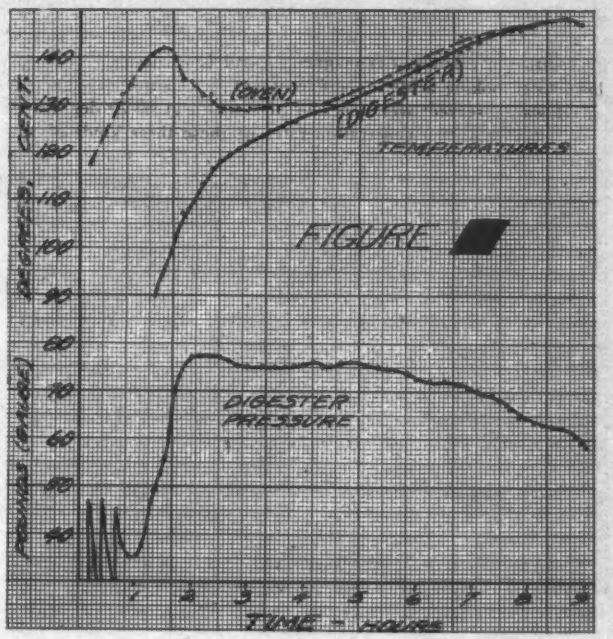

FIG. 5

Sulphite Cooks using ¾ inch Spruce (82) Chips, Cook Base in Acid No. 131 Ca.-Mag., No. 152 Ca.-Mag., No. 153 Ca.-Mag. Date of Cooks 9/14/25.

that factor in sulphite cooking which serves as the basis of this chapter, namely, the effect on yield and bleaching quality of spruce sulphite pulp exerted by a change from one kind of base (limited to those which are or may be of economic value in sulphite cooking) to another in the cooking liquor.

Temperature and pressure curves obtained in the fourteen sulphite cooks mentioned in Table 3 are seen in Figures 4, 5, 6, 7 and 8. These curves after the first hour are found to be as nearly equivalent to each other as our methods of digester operation would permit one to reproduce the same set of temperature and pressure conditions time after time.

As can be seen by referring to Table 3 all variables, involved in the sulphite method of cooking wood, such as time, shape of chips, volume of cooking liquor and composition of cooking liquor are substantialy the same for each of the fourteen cooks.

In every case we used our standard apparatus, method of cooking, treatment of pulp, methods of determining yields of pulp and screenings and determinations of bleach consumption and loss of weight of pulp on bleaching; all of which were minutely described in the previous chapter.

Table 4 expresses the yield of pulp for each cook in terms of pounds of bleached or unbleached pulp (either oven dry or air dry equivalents) per cord of wood. These values are obtained on the assumption that a cord of pulpwood in four foot lengths

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[41] Paper Industry (Dec., 1921), p. 1247.
[42] U. S. patents 1,427,125; 1,519,508; 1,519,509; 1,545,522; 1,598,880; 1,610,323.
[43] U. S. patent 1,507,559.
[44] Fr. patent 574,281 (Dec. 8, 1923); Abstract in Pulp & Paper Mag. Can. 23, 103 (Jan. 22, 1925).
[45] U. S. patent 1,560,649.
[46] Papier-Fabr. 24, 691-695, 709-713, 722-728 (Nov. 7-21, 1926); Translation in Paper Ind. 8, 1914a-1914h and 1917 (Feb., 1927); Paper Trade Jour. 84, No. 9, pp. 51-60 (Mar. 3, 1927).
[47] Papier-Fabr. 24, 775-780 (Dec. 12, 1926).
[48] U. S. patent 1,016,178 (Jan. 30, 1912).
[49] U. S. patent 1,244,525 (Oct. 30, 1917); Jap. pat. 31,941.
[50] U. S. patent 1,547,907 (July 28, 1925).

and peeled contains approximately 90 cubic feet of solid wood and that white spruce in general has approximately the same oven dry specific weight as the log S2) with which we have worked in this set of experiments, namely 23.95 pounds per cubic foot.

Table 5 gives information as to the number of pounds of bleach required to bleach 100 pounds of the oven-dry or the air-dry pulp corresponding to each of the fourteen pulps produced in this set of sulphite cooks.

Discussion

A review of Table 3 clearly shows that white spruce gives practically the same degree of purity (so far as bleach consumption is concerned) regardless of whether it is cooked with an acid liquor,

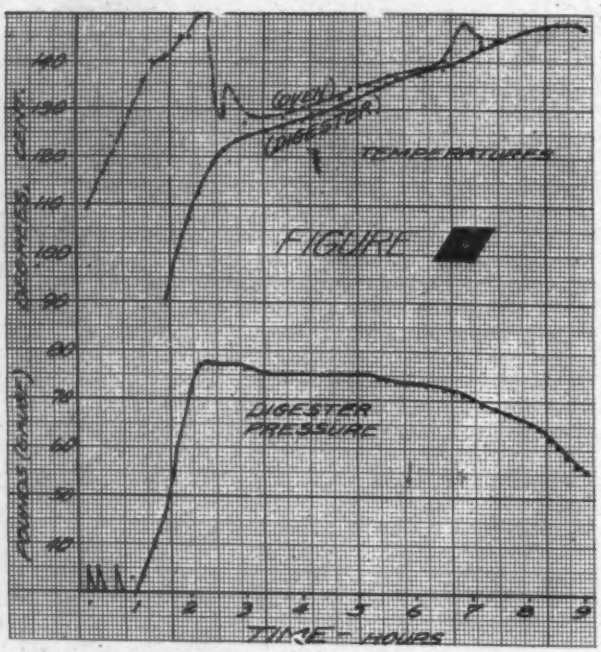

FIG. 6

Sulphite Cooks using ¾ inch Spruce (S2) Chips Cook Base in Acid No. 174 Calcium, No. 175 Ca.-Mag., No. 176 Magnesium. Date of Cooks 9/29/25.

TABLE 3

PULPS FROM COOKING LIQUORS CONTAINING VARIOUS BASES

Kind of wood used in each cook—¾-inch spruce (S2) chips.
Moisture content of chips—10.0% for cooks 141, 142, 143, 152 and 153.
11.1% for cooks 174, 175 and 176.
6.1% for cooks 211, 212, 213, 214, 215 and 216.
Weight (air dry) of chips used in each cook—65.00 grams.
Volume of cooking liquor for each cook—325 cc. (Wt.—333.4 grams.)
Length of each cook from start of heating period till oven is opened and cooled—9.0 hours.

Cook No.	Cooking liquor base [32]	Strength of cooking liquor: % Free SO_2	Strength of cooking liquor: % Comb. SO_2	Yield of pulp, based on weights of pulp and original chips in oven dry condition: % Screened pulp	% Screenings	% Pulp and screenings	Bleach (35% chlorine) requirement of pulp % based on oven dry weight [33]	Loss in bleaching, weight of % based on unbleached pulp
141	Calcium	3.37	1.02	49.6	None	49.6	13.3	3.1
174	Calcium	4.31	1.12	50.8	0.01	50.8	13.7	3.5
211	Calcium	3.68	1.09	49.3	None	49.3	11.1	2.0
214	Calcium	3.66	1.02	49.3	None	49.3	11.1	2.0
142	Calcium-Mag.	3.31	1.06	49.7	None	49.7	13.6	2.6
152	Calcium-Mag.	3.31	1.06	49.6	None	49.6	14.0	1.2
153	Calcium-Mag.	3.31	1.06	49.9	None	49.9	14.5	2.4
175	Calcium-Mag.	4.27	1.13	50.8	0.03	50.8	12.8	3.2
176	Magnesium	4.23	1.14	50.7	None	50.7	14.2	3.0
143	Sodium	4.13	1.10	50.2	None	50.2	13.4	2.6
212	Sodium	4.21	1.14	49.5	None	49.5	10.6	1.4
215	Sodium	4.21	1.14	50.1	None	50.1	9.7	2.0
213	Ammonium	4.34	1.12	49.4	None	49.4	10.8	2.1
216	Ammonium	4.34	1.12	49.9	None	49.9	9.2	2.5

[32] loc. cit.
[33] The bleach liquors used in these tests had a free lime ($Ca(OH)_2$) normality of approximately 0.0359. These liquors varied in available chlorine normality from 0.432 to 0.634.

having for its base—calcium, magnesium, calcium and magnesium together (as in dolomitic lime), sodium or ammonium.

The maximum difference between the highest and the lowest yields among these fourteen cooks is 1.5 pounds. This is what might be considered the order of experimental error for the apparatus and methods used in this kind of experiment.

The amount of bleach consumed by the sodium bisulphite pulp

TABLE 4

YIELDS OF SULPHITE PULP PER CORD OF SPRUCE WOOD [34]—COOKING LIQUORS CONTAINING VARIOUS BASES

Cook No.	Cooking liquor base	Yields of pulp (oven dry weight of pulp and chips)	Yields of oven dry pulp: Unbleached pulp per cord	Yields of oven dry pulp: Bleached pulp per cord	Yields of air dry pulp: Unbleached pulp per cord	Yields of air dry pulp: Bleached pulp per cord
		%	lb.	lb.	lb.	lb.
141	Calcium	49.6	1070	1036	1189	1150
174	Calcium	50.8	1094	1056	1214	1171
211	Calcium	49.3	1061	1040	1180	1154
214	Calcium	49.3	1061	1040	1180	1154
142	Calcium-Mag.	49.7	1071	1042	1190	1157
152	Calcium-Mag.	49.6	1070	1058	1189	1173
153	Calcium-Mag.	49.9	1074	1049	1193	1162
175	Calcium-Mag.	50.8	1094	1060	1214	1177
176	Magnesium	50.7	1092	1060	1212	1177
143	Sodium	50.2	1081	1052	1200	1169
212	Sodium	49.5	1067	1051	1183	1158
215	Sodium	50.1	1080	1060	1200	1178
213	Ammonium	49.4	1063	1040	1180	1154
216	Ammonium	49.9	1074	1048	1192	1161

might be said to be a shade less than that required for any of the other five kinds of sulphite pulp, but here we are prevented from drawing any generalizing conclusions on account of the limited number of sodium bisulphite and other sulphite pulps produced up to the present time from white spruce.

There is no doubt about the sodium bisulphite pulps in these experiments being distinctly whiter in the unbleached condition

TABLE 5

BLEACH REQUIREMENTS OF SPRUCE SULPHITE PULPS OBTAINED WITH COOKING LIQUORS CONTAINING VARIOUS BASES

Cook No.	Cooking liquor base	Bleach requirement of pulp. Amount of bleach (35% available chlorine) in pounds unbleached pulp: Based on 100 lb. oven dry pulp %	Based on 100 lb. air dry pulp (10% moisture content) %
141	Calcium	13.3	12.0
174	Calcium	13.7	12.3
211	Calcium	11.1	10.0
214	Calcium	11.1	10.0
142	Calcium-Magnesium	13.6	12.2
152	Calcium-Magnesium	14.0	12.6
153	Calcium-Magnesium	14.5	13.0
175	Calcium-Magnesium	12.8	11.5
176	Magnesium	14.2	12.8
143	Sodium	13.4	12.0
212	Sodium	10.6	9.5
215	Sodium	9.7	8.7
213	Ammonium	10.8	9.7
216	Ammonium	9.2	8.3

than the other sulphite pulps. As to its superiority over the other pulps with respect to strengh, pliability and other physical properties we have to postpone judgment until we have repeated some of these experiments on a larger scale.

The conclusions to be drawn from the experimental part of this report are purely based on chemical and physical considerations and in no way upon economic considerations.

Summary of Chapter III

1. Work done by Magill at the University of Wisconsin on the comparative cooking of spruce and pine in liquors containing the bisulphites of thirteen bases is mentioned.

2. Historical sketches are given of the work of various investi-

[34] These yields are based on the assumption that a cord of sound spruce such as that used in these experiments contains approximately 2,155 pounds of oven dry wood substance.

gators on the sulphite cooking of wood with bisulphite acids having the following bases:

A. Magnesium.
B. Magnesium and calcium together.
C. Sodium.
D. Ammonium.

3. Original data is presented on the experimental sulphite cooking of spruce with calcium bisulphite acid and with acids having bisulphites of the four above bases. Spruce cooked with these five different kinds of bisulphites gave yields and pulp bleach consumptions substantially the same in all cases for our standard cooking procedure. These yields varied from 49.3 per cent to

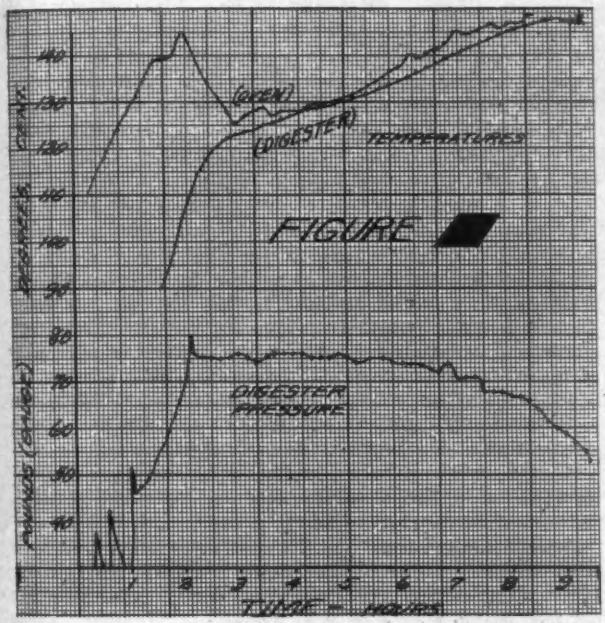

FIG. 7

Sulphite Cooks using ¾ inch Spruce (S2) Chips Cook Base in Acid No. 211 Calcium, No. 212 Sodium, No. 213 Ammonium. Date of Cooks 3/9/26.

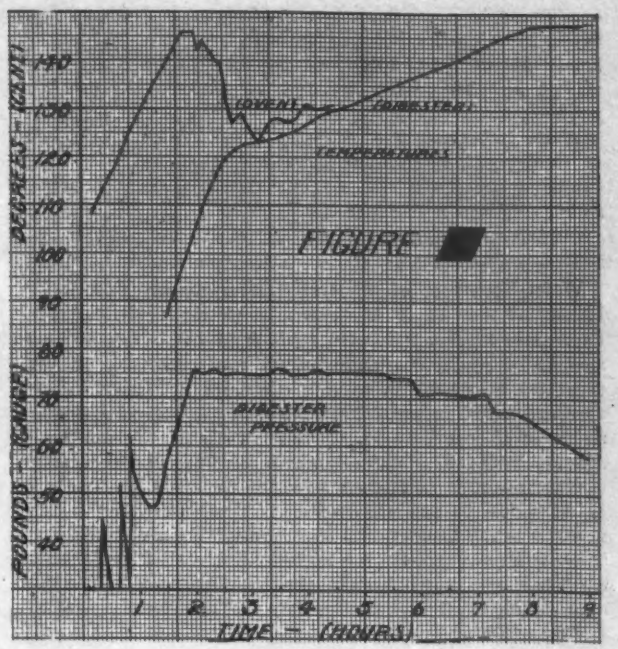

FIG. 8

Sulphite Cook using ¾ inch Spruce (S2) Chips Cook Base in Acid No. 214 Calcium, No. 215 Sodium, No. 216 Ammonium. Date of Cooks 3/16/26.

50.8 per cent (oven dry weights of pulp and chips considered).

4. The estimated yields of air dry bleached pulp obtained experimentally varied from 1150 pounds to 1178 pounds per cord of peeled white spruce.

5. These conclusions regarding the yields of pulp being approximately the same for spruce regardless of which of the five kinds of bisulphite are present in the acid should not be applied to other woods, particularly the resinous pines. There the kind of base in the cooking acid is a factor of major importance, for an acid having sodium bisulphite is known to react in a much different manner than one having calcium bisulphite.

(To be concluded)

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

New Method of Testing Paper. Joseph G. Bercsi. Paper Trade J. 84, No. 7, 39-42 (Feb. 17, 1927). Experiments on metals in Professor Alexander Rejtö's laboratory at the Königlische Ungarische Josef-Technische Hochschule proved that a variety of mechanical tests, such as pressing, bending, wearing, etc., could be replaced by the pulling or tensile test, if the proper formula were used for calculating the particular end desired. Working formulas for these operations were established by Prof. Rejtö and applied to all materials equally, including paper products. Rejtö's hypothesis is that the wearing quality of a paper is related to its breaking resistance or to the amount of work put into the stretch test. This work applied to unit area of paper determines its "hold" and applied to unit weight measures its "quality." In order to test paper systematically, it is necessary to determine its breaking strain, tensile strength and tearing resistance by breaking paper samples and preparing proper diagrams. An instrument devised by Prof. Rejtö for making the tensile and elongation tests and automatically registering the force-elongation diagram is described and the technique of its use together with the precautions to be observed and the method of calculating the quality are explained. A triangular rule has been devised for facilitating the measurement of the area of the diagram and the calculation of the quality of the paper.—A. P.-C.

Water Imperviousness of Paper. W. Herzberg. Wochbl. Papierfabr. 57, 1484-1485 (Dec. 31, 1926). Papierfabr. 25, 26-28 (Jan. 9, 1927). The following tests for ascertaining the water imperviousness of paper are briefly described: (1) the funnel test, in which the paper sample is folded similar to filter paper and a definite volume of water added to the container so formed. From time to time the amount of water which filters through is noted. (2) the basin test involves the fastening of the sample horizontally at its four corners between upright supports, and the adding of water to the basin-like contrivance. The height of the water level at the deepest place is kept constant. Under the suspended sheet is placed a dish to catch the filtered water. (3) the water pressure tester, employed in tre German testing laboratory, consists in clamping the paper sample in a device which permits

one side to be exposed to water, the pressure of which can be varied by raising or lowering the main reservoir. (4) the well known flotation tests mentioned are those of Stockigt, Klemm, and Carson. The results on a few wrapping and bag papers are given.—J.L.P.

Water Imperviousness of Paper. Anon. Wochbl. Papierfabr. 58, 74 (Jan. 22, 1927). The methods mentioned in the preceding abstract are criticized. The ammonium thiocyanate-ferric chloride flotation method is recommended as being a satisfactory test for evaluating the waterproof quality of paper. The sugar-dyestuff method is also a sensitive test but is less commendable.—J.L.P.

Water-Resistance of Mineral Coated Papers. George K. Hamill. Paper Trade J. 84, No. 8, 146-155 (Feb. 24, 1927); Paper Mill 50, No. 9, 130-140 (Feb. 26, 1927). A study of the methods of testing and improving the water resistance of coated paper led to the following conclusions. The indicator method appears to offer a satisfactory means of comparing the water-resistance of coated papers. The results are not absolute on account of variations in the color sense of different observers, but fair agreement is generally obtained in the ranking of series of coated papers by different observers. The curl method does not seem to be appliable for general testing of coated papers. It is so standardized as to give valuable information for comparing the behavior of coated papers when used for processes such as lithographing or when exposed to abnormal atmospheric conditions. There appears to be no fixed relationship between the results of tests for water-resistance by the indicator method, smudging tests, or resistance to picking or lifting by the moistened thumb or sealing wax pick tests. The water-resistance of glue-bound coated papers may be markedly improved either by treating the freshly coated papers with formaldehyde or by adding formaldehyde directly to the coating mixtures. The degree of water-resistance possessed by such formaldehyde-treated glue-bound coated papers was comparable with that of the commercial coated papers tested. The proportion of formaldehyde required to obtain a given degree of water-resistance varies with the grade of glue. The viscosity of coating mixtures bound with medium-grade glues is best suited for applying at about 89° F. Such glue-bound mixtures, at this temperature, may contain from 5 to 8% of formaldehyde based on the weight of glue without unduly shortening their working lives. With larger amounts of formaldehyde or at higher temperatures the working life of such a mixture is shortened. A relatively small amount of agitation generally serves to diminish the viscosity of such mixtures if they tend to thicken. The effects of formaldehyde on the viscosity and working life of glue-bound coating mixtures are influenced by the grade and proportion of glue used and by the concentration of the mixture.—A.P.-C.

New Piezo-Micrometer. James Strachan. World's Paper Trade Rev. 86, 1922, 1924 (Dec. 17, 1926). Description of an all-metal instrument suitable for determining the hardness and resiliency of rubber sheets or of rubber-covered rolls and the thickness of paper, and which, with slight modifications which do not involve any structural change in the design of the instrument, may be used also for testing the strength of jellies (gelatine) and the viscosity of plastic solids.—A.P.-C.

New Means for Paper Investigation. Anon. Wochbl. Papierfabr. 57, 1368-1370 (Dec. 4, 1926). Suitable instruments for the examination of paper surfaces are the binocular microscope, and the binocular magnifying glass. These give a satisfactory magnification of the surface, a stereoscopic picture, and afford an insight into the composition of the sheet.—J.L.P.

Wet-Rub Tester for Paper. A Service for Measuring the Resistance of Moist Paper to Abrasion. F. T. Carson and F. V. Worthington. Paper Trade J. 84, No. 2, 45-46 (Jan. 13, 1927). The apparatus consists essentially of means for passing the end of a rubber stopper (the size and hardness of which may be standardized) over the test piece until the latter has been worn through. The pressure of the stopper on the paper is adjustable, the number of double-rubs is counted automatically, and the instrument is automatically stopped when the paper has been worn through. It is particularly useful for testing currency paper, glue tub-sized and engine-sized papers of various characters, and glue- and casein-bound coated papers. Average per cent deviations from mean results varied from 5.7 to 13.5.—A.P.-C.

Instrument for Measurement of the Effect of Wetting on the Dimensions of Paper. Anon. Mon. Papeterie Belge 6, 715 (Nov., 1926). Brief description of the instrument put out by Schopper, of Leipzig.—A.P.-C.

Research on the Production of Currency Paper in the Bureau of Standards Experimental Paper Mill. Merle B. Shaw and George W. Bicking. Paper Mill 50, No. 3, 16, 35-40 (Jan. 15, 1927). As regards fiber composition, a mixture of 75% linen and 25% cotton rags gave best folding resistance and was as good as other compositions in other respects. The formation and surface of the sheet were better than for the 100% linen furnish. Paper containing larger amounts of cotton were, in general, weaker in folding endurance and, being softer in texture, the surface of the paper was more likely to fuzz when in actual service. For the 75:25 mixture the beating interval that gave best results was approximately 12 hrs. The strength of the finished paper was largely attributable to the fact that the fibers were long and well brushed out at the completion of the beating. Freeness readings depend on the nature of the fibers as well as on the duration of the beating. The freeness data obtained are not sufficient to permit definite statements as to the effect of freeness on the quality of the paper: the fibers must be beaten long enough to produce smoothness, but not so long as to produce weakness. Waterleaf paper had higher tearing resistance, tensile strength and folding endurance than paper engine-sized with either rosin or glue, with or without addition of clay filler, indicating that the strength of the paper is attributable, within certain limits, to the flexibility and softness of the fibers as well as to their length.—J.L.P.

Paper Making Process. J. J. Gannon, L. W. Mahle and F. B. Wells assignors to The Ohio Boxboard Co. U. S. pat. 1,606,162, Nov. 9, 1926. A layer of old newspaper stock or other filler material is deposited on a layer of greaseproof material, such as sulphite stock, and surplus water is expressed from the combined layers in a direction away from the greaseproof material and through the layer of filler material.—A.P.-C.

Paper. J. J. Gannon, L. W. Mahle and F. B. Wells assignors to The Ohio Boxboard Co. U. S. pat. 1,606,163, Nov. 9, 1926. During the formation of the paper on the paper machine, a layer of sulphite pulp mixed with paraffin or other greaseproof material is incorporated so as to form an integral part of the finished paper.—A.P.-C.

Relationship Between Raw Stock and Coated Paper. Norman Clark. Paper Ind. 8, 1531-1534 (Dec., 1926). A discussion of the properties required of raw stock according to the purpose for which the coated paper is to be used.—A.P.-C.

Some Practical Experience in the Manufacture of Greaseproof Paper. K. J. Mattas. Suomen Paperi-Ja Puutavaralehti No. 8 (1926); Pulp and Paper 24, 1485 (Dec. 9, 1926). Brief discussion of Norwegian practice, more particularly as regards power consumption.—A.P.-C.

Safety Papers. Todd Co. Inc. Eng. pat. 256,921. An organic compound, the molecule of which comprises a group of carbon rings joined together by having two carbon atoms in each ring in common with the adjacent ring, a carbon atom of said group of rings attached to a carbon atom of another group of carbon rings similarly bound together and a number of amino radicals substituted in said rings by hydrogen atoms, is added to the pulp or applied to or formed by reaction in the paper. These substances react with the usual ink-eradicating chemicals giving deep colorations. Alpha-naphthidine is mentioned as an example and is used in the form of sulphate.—A.P.-C.

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Measures of Business Efficiency*

By Clyde Morgan, Treasurer, S. D. Warren Co., Boston, Mass.

President Lowell, of Harvard, in a recent report to the Overseers of the University said, "Much of the evil in the world comes from errors in ideas, from a simple failure to think clearly and to grasp the essential, as distinguished from the superficial, elements in a situation. We are apt to form a habit without considering whither it leads; or, to have a dim idea of an object, adopt a means of reaching it, forget the object, and develop the means until they are quite inconsistent with the object to be obtained."

The fact that President Lowell was speaking of athletics, and more particularly of football, does not make the statement less striking or less to the point. The statement applies as forcefully to business and business men in general, so I like to get back to the fundamentals of existence now and then, and thus, in some measure, counteract this tendency "to develop the means until they are quite inconsistent with the objects to be attained." Now and then I like to read over the Declaration of Independence, and again try to realize that in the final analysis our personal lives are builded on the principles set forth in this document.

Getting down to a consideration of business, I look for some document embodying the fundamental laws and principles upon which business life is built. Unfortunately, the search is more difficult. Why this should be true, concerning such an important feature of human existence, I do not know.

Why are we in business? What are the principles upon which industry should be built? The late Judge Parker, once Democratic candidate for the Presidency of the United States, and always one of the eminent jurists of the age, has given us the most comprehensive and satisfactory statement of the fundamental "Principles of Business Conduct." Space here will not permit me to give in full his remarkable document, written for, and published by, the Chamber of Commerce of the United States. I recommend that everyone secure a copy of this little booklet and read it, for it is well worth while. I can give now merely the fifteen "Principles of Business Conduct," set forth in a resolution passed by that body at the Twelfth Annual Meeting at Cleveland, Ohio, on May 8, 1924.

Principles of Business Conduct

PREAMBLE—"The function of business is to provide for the material needs of mankind and to increase the wealth of the world and the value and happiness of life. In order to perform its function it must offer a sufficient opportunity for gain to compensate individuals who assume its risks, but the motives which lead individuals to engage in business are not to be confused with the function of business itself. When business enterprise is successfully carried on, with constant and efficient endeavor to reduce the cost of production and distribution, to improve the quality of its products, and to give fair treatment to customers, capital, management, and labor, it renders public service of the highest value.

"We believe the expression of principles drawn from these fundamental truths will furnish practical guides for the conduct of business as a whole and for each individual enterprise."

PRINCIPLE 1—THE FOUNDATION of business is confidence, which springs from integrity, fair dealing, efficient service, and mutual benefit.

PRINCIPLE 2—THE REWARD of business for service rendered is a fair profit plus a safe reserve, commensurate with risks involved and foresight exercised.

PRINCIPLE 3—EQUITABLE CONSIDERATION is due in business, alike to capital, management, employees, and the public.

PRINCIPLE 4—KNOWLEDGE—thorough and specific—and unceasing study of the facts and forces affecting a business enterprise, are essential to a lasting individual success and to efficient service to the public.

PRINCIPLE 5—PERMANENCY and continuity of service are basic aims of business, that knowledge gained may be fully utilized, confidence established and efficiency increased.

PRINCIPLE 6—OBLIGATIONS to itself and society prompt business unceasingly to strive toward continuity of operation—bettering conditions of employment and increasing the efficiency and opportunities of individual employees.

PRINCIPLE 7—CONTRACTS and undertakings, written or oral, are to be performed in letter and in spirit. Changed conditions do not justify their cancellation without mutual consent.

PRINCIPLE 8—REPRESENTATION of goods and services should be truthfully made and scrupulously fulfilled.

PRINCIPLE 9—WASTE in any form—of capital, labor, services, materials, or natural resources—is intolerable, and constant effort will be made toward its elimination.

PRINCIPLE 10—EXCESSES of every nature—inflation of credit, over-expansion, over-buying, over-stimulation of sales—which create artificial conditions and produce crises and depressions are condemned.

PRINCIPLE 11—UNFAIR COMPETITION, embracing all acts chacterized by bad faith, deception, fraud, or oppression—including commercial bribery—is wasteful and a public wrong. Business will rely for its success on the excellence of its own service.

* From N.A.C.A. Bulletin.

PRINCIPLE 12—CONTROVERSIES will, where possible, be adjusted by voluntary agreement or impartial arbitration.

PRINCIPLE 13—CORPORATE FORMS do not absolve from, or alter, the moral obligations of individuals. Responsibilities will be as courageously and conscientiously discharged by those acting in representative capacities, as when acting for themselves.

PRINCIPLE 14—LAWFUL COOPERATION among business men, and in useful business organizations in support of these principles of business, is commended.

PRINCIPLE 15—BUSINESS should render restrictive legislation unnecessary, through so conducting itself, as to deserve and inspire public confidence.

These, I believe, embody the fundamentals upon which business is built. It is safe to say that the acceptance and practical application of these principles in every business will lead to success; or, conversely, the violation of these principles will lead to failure.

That this is true is easily demonstrated. How many businesses in the United States are successful? The latest available figures (from the December 11th issue of Sales Management) show some rather astonishing facts. An analysis of 414,421 firms brings out the fact that but 236,389, or 56.6 per cent, made any profit at all in 1924; and 178,032, or 43.4 per cent, showed a deficit.

Merely incidentally, in certain industries the percentages are appalling. Only 35 per cent of the Cotton Manufacturers made a profit, 65 per cent showing a deficit. But 35.8 per cent of Auto Tire and Inner Tube Manufacturers showed a profit, 64.2 per cent showing a deficit.

From another angle: The Bureau of Business Standards of the Shaw Publications recently published a report which indicates an astonishing condition of affairs. The general average of life for manufacturing concerns in the United States is but seven years. It is pointed out that the average Wholesale Grocery House, the average Iron Works, and the average Jewelry Store have but five chances out of ten to live fifteen years. The average Wholesale Meat Business and the average Book and Stationery Store have less than two chances out of ten to live fifteen years. The average Furniture Factory, the average Clothing Store, and the average Wholesale Lumber Business have only about one even chance out of ten to live ten years. Several thousand concerns are represented by these figures; they all died before they were thirty years of age. What fundamental laws were violated to bring these businesses prematurely to their graves?

An analysis of several thousand of these business failures, made by the same organization and taken from their report is as follows:

The Causes of Business Deaths

FROM A STUDY OF 2,550 RETAIL STORES

Failure to take a legitimate profit
Increasing cost of doing business
Ignorance of overhead expense
Bad accounting and poor collections
Overbuying
Cut-rate competition
Lack of capital
Poor location
Undue eagerness to make a big splurge
Failure to take a "census" of the local market
Poor stocks
Failure to create a store personality
Poor equipment and fixtures
Unsupported advertising

AN ANALYSIS OF DEATHS AMONG 492 WHOLESALE CONCERNS

Handling inadequately advertised lines
Failure to advertise
Overbuying
Lack of supply for private brands
Indiscriminate extension of credit
Failure to foresee changes in style
Poor collection methods
Unwillingness to help the retailer

THE RESULT OF A STUDY OF 1327 MANUFACTURING CONCERNS

Neglect of established line
Unwise experimentation
Exorbitant overhead expense
Diffused attention
Overproduction
Poor design
Lack of capital
Antiquated equipment
Overlooking new demands
Bad buying
Too much waste and spoilage
Trying to change market to fit product, rather than product to fit market
Inadequate selling methods

Bearing in mind the before-mentioned "diseases," examine Bradstreet's analysis along similar lines:

ANALYSIS OF BUSINESS DEATHS

	Number	
	1924	1923
Lack of capital	6,573	6,563
Incompetence	6,778	6,448
Inexperience	927	902
Unwise credits	211	223
Failures of others	305	297
Extravagance	307	259
Neglect	254	231
Competition	381	262
Specific conditions	3,130	3,116
Speculation	96	63
Fraud	750	796
Totals	19,712	19,159

Having in mind the Principles of Business Conduct which I read you, what does the autopsy show? Check these four sets of Business Diseases, and you will note that by far the greater percentage died of a malady which you gentlemen alone—you accountants—can cure.

From a study of 2,550 Retail Stores, with a total of fourteen causes of Business Deaths, eight can be attributed to "Lack of Knowledge."

From a study of 492 Wholesale Concerns, with a total of eight causes of Business Deaths, three can be attributed to "Lack of Knowledge."

From a study of 1,327 Manufacturing Concerns, with a total of thirteen causes of Business Deaths, nine can be attributed to "Lack of Knowledge."

From a study of 19,712 Business Deaths, by Bradstreet's with a total of eleven causes of business Deaths, six can be attributed to "Lack of Knowledge."

Knowledge

"Knowledge, thorough and specific"—an unceasing study of the facts and forces affecting a business enterprise—are essential to a lasting individual success and to efficient service to the public.

After some seventeen years in various capacities with varying sorts of businesses, I have come to the conclusion that violation of this Principle—that lack of knowledge, thorough and specific—is the greatest cause of business mortality. The violation of this Principle has caused more business deaths than any other single factor, so I would like to discuss briefly this Principle and its practical application to our businesses. I will not touch upon knowledge in the direction of merchandising or the technical branches of business. These are subjects to be discussed only by specialists in those particular branches, and I will give my attention to the accounting and financial aspects.

This Principle is well recognized and while everyone,—particularly in a gathering of this sort—will accept it as fundamental, it

is difficult to interpret it in terms of everyday business. What is knowledge, thorough and specific? Does it mean the determination of Costs, Operating Expenses, Financial Standing, Net Worth, etc.? Does it mean the determination of the facts and figures having to do with a business or does it go farther than that?

It is the function of you gentlemen, in your respective organizations, to produce and present the vital statistics of your business. Statements for use in determining costs and operations are not difficult to produce. I will not try to enter into a technical discussion of cost accounting. I am not so vitally interested in the question of whether or not interest is properly included in manufacturing costs or in the various principles of expense distribution. The question of standard costs versus actual costs is of little moment. Accounting and statistical methods are becoming well recognized. Your Association, for instance, has done wonderfully fine work in developing satisfactory accounting procedure for the use of industry. Sometimes I fear that we, as accountants, are "adopting a means, forgetting the object, and developing the means until they are quite inconsistent with the object to be attained." The statistics—the facts you produce—of themselves mean very little. The abstract facts stated in a Balance Sheet and Income Statement, a Cost Analysis, or a Sales Analysis, may be interesting of themselves, but they really mean nothing. The amount of Plant Investment, of Current Liabilities, of Gross Sales, of the Cost of Doing Business, Total Interest and Capital Charges, may be interesting of themselves, but unless we have some yard-stick by which to measure them, unless we can find some measures of business efficiency with which to compare them, they are valueless.

As an illustration: A fruit man has twenty-five dollars of capital. He invests fifteen dollars in Plant, that is, a push cart. He invests ten dollars in Inventory, that is, he goes down to the fruit piers and buys bananas. He goes out through the city and sells his fruit in one day, for twenty-five dollars. There we have the facts of a business. There is nothing remarkable in that. If he so wished, he might make nicely typewritten reports, showing his Sales that day as compared with the same day last week, last month, last year. He might chart his Sales by days, separately and cumulatively. He might analyze his Sales by streets; he might make comparative Balance Sheets and Profit and Loss Statements; he might even work out very complete Cost Analyses, showing how much it would cost to sell one banana, one dozen, a whole bunch, case lots, broker lots, etc. All these would be nothing but facts, however. Some day the fruit man's son may come home from college and show dad that there are certain relationships in his business which should not be overlooked. And he might point out that the Turnover of Capital Invested in Inventory was one Turnover a day—or, allowing for Sundays and holidays, 300 times per year; that his profits were 60 per cent of gross sales; or his profits per year, 180 times his total investment. Of themselves these are interesting facts, but of themselves they mean nothing. As abstract figures they are ridiculously small. His gross sales of $7,500 per year, and his gross profits of $4,500 per year, were ample for his needs. To the company with which I am connected such figures would mean ruin. On the other hand, if in our business we could attain a Turnover of Inventory of 300 times per year, or even approach a Profit of 60 per cent of Gross Sales—or, if we could come anywhere near making Profits 180 times our Total Capital Invested—we certainly would attract considerable attention in the paper industry, and in industry in general. Your figures may be reasonable and satisfactory to you, but they might spell ruin to the United States Steel Corporation or the Ford Motor Company. The figures of themselves mean nothing, unless considered in their relation to the other financial and operating statistics of the particular unit of business and—what is of vitally more importance—in relation to the measure of efficiency as established in the rest of the industry, and in relation to the meaures of efficiency established in other industries, as well.

* See Bliss: Financial and Operating Ratios in Management.

So it is with business in general. Sometimes I feel that we accountants are very much like the little boy who went to kindergarten for the first time. When he got home, his mother asked him what he had learned. "Gee, Ma, we marched; and all the time we were marching I watched just myself; and, Ma, I'm the best marcher in the world!"

It is obvious that competition is the essence of all commercial organization. Competition is the force promoting efficiency, development, and industrial growth. This competitive condition in industry extends to every phase of its affairs. There is competition in merchandising, in factory operation, in distribution, and, though it is not as generally recognized, in financial management. Competitive conditions in industry have established standards in every detail of operation, which must be met if success is to be attained.

Standards and Measures

Everyone appreciates the existence of competitive standards in merchandising. Business men, as a general rule, must buy and sell at competitive prices. Exceptionally good merchandising may afford a somewhat better gross margin than the average. Efficient plant operation, quality product, good service, may yield some competitive advantages, but there are well-known and accepted standards to be met in every line. It is not as well recognized, but just as true, that in financial affairs there are definite standards set by competitive conditions. There is economy and efficiency in the use of capital, fully as important as economy and efficiency in operation. There is a normal or average turnover of inventories. There are recognized terms of sales which should be reflected in turnover of accounts receivable. There is an average, or normal, investment in fixed properties necessary for any given volume of business. As the cost of borrowed capital must come out of gross margin, the competitive standards for economy and efficiency in the use of borrowed capital must be observed and met, if best returns upon net worth are to be realized. A slower-than-average turnover of any kind, or unnecessary investments of any type, put competitive handicaps on the business, which affect return on capital just as failure to meet competitive conditions in merchandising or operation.

And there is nothing of greater importance in the management of any business than determination of the standards to be striven for, if the most advantageous showing is to be made. Ratios of Expenses, Earnings to Sales, and Ratios of Earnings on Capital Employed, are well-known and commonly used measures for judging business affairs; but these are only three of the relationships which should be considered. In the same class should be considered all of the other ratios, relationships, and turnovers, for they are all indicators of the conditions existing in a business. They are all expressions of relationships for which there are, or should be, recognized standards. They may be classified as follows:*

Measures of Earnings

1—Relation of surplus net profits to net worth:
Balance of Net Profits after Dividends, taxes and other surplus charges ÷ Total Net Worth or Total Capital Invested.

2—Relation of surplus net profits to volume of business:
Balance of Net Profits after Dividends, taxes and other surplus charges ÷ Gross Sales.

3—Relation of earnings to Common Stockholders' Investment:
Balance of Net Profits after Dividends on Preferred Stock, Taxes and other surplus charges ÷ Book Value of Common Stock.

4—Relation of operating profits to total capital used:
Net Profits before Dividends and Taxes ÷ Total Net Worth.

5—Relation of operating profits to volume of business:
Net Profits before Dividends and Taxes ÷ Gross Sales.

5—Relation of gross earnings to volume of business:
Gross Profits ÷ Gross Sales.

Measures of Costs and Expenses

1—Relation of costs and expenses to volume of Business:
A—Total Cost of Goods Sold ÷ Gross Sales
B—Total Expense of Doing Business ÷ Gross Sales.
2—Relation of property expenses to investments and sales:
A—Total Fixed Capital Expense ÷ Total Net Worth.
B—Total Fixed Capital Expense ÷ Gross Sales.
3—Cost of borrowed capital.
4—Cost of total capital employed.

Turnovers

1—Turnover of total capital employed:
Gross Sales ÷ Total Net Worth.
2—Turnover of Inventory:
Cost of Goods Sold ÷ Total Inventory.
3—Turnover of accounts receivable:
Net Sales ÷ Accounts Receivable.
4—Turnover on fixed property investment:
Gross Sales ÷ Total Fixed Assets.

Financial Relationships

1—Working capital ratio:
Current Assets ÷ Current Liabilities.
2—Manner in which capital is employed:
Per cent of total Net Worth in Working Capital, Fixed Assets, etc.
3—Sources from which capital is secured.
Per cent of total Net Worth in Preferred Stock, Common Stock, Surplus, etc.
4—Proportion of earnings left in the business:
Net profit after Taxes, Dividends and other surplus charges ÷ Total Net Profits.

Measures of Efficiency

These relationships, or "Measures of Business Efficiency," are self-explanatory, so I will not weary you with discussion of definition. Such information may be secured from authoritative sources.

There is, however, one further step which we must consider before we can arrive at "knowledge, thorough and specific." We must ascertain the facts and relationships not only in our own businesses, and the facts and relationships in our specific industries, but we must ascertain besides, the facts and relationships in other industries.

Of what interest can the facts and relationships of other industries be to us in our respective industries? Of what importance can be facts and relationships of the leather Industry to be those engaged in Cotton Cloth Manufacture? What possible connection can the facts and relationships of the Paper Industry bear to the Meat Packing Industry?

I can assure you that study of the facts and relationships of any industry can make standards of performance apparent that may revolutionize any and all businesses and industries. I have time for but a few illustrations. A certain unit in the paper industry found itself beset by the ills which seemed to be always with that industry. It was making its product on order, to customer's specifications and samples submitted, with all the chance of dissatisfaction and error which these methods entail. The product was being sold on a price basis, which is never sound. The result was dwindling profits, which spells business death. The dominant factor in that business, with vision and foresight, began to look for the answer to the other large industries. He found it in the automobile industry, for one. He found that standardized product, mass production, service, standard prices, etc., made for manufacturing efficiency, economy of costs, volume of sales and profit; and, with vision and foresight, he set about applying these principles to his own business. The results were astonishing and were instrumental, more than any other factor, in stabilizing this great industry. Today this company's product is manufactured in a limited number of standard grades and sizes, packed in standard units, stocked by the mill, nationally advertised, distributed through recognized jobbers at standardized resale prices, with all the resulting savings to the consumer and with gratifying profit to the manufacturer and distributor.

Another Illustration

Another illustration. Two manufacturers of the same specialty sold through hardware jobbers, together dominating their industry, in 1923 found themselves in a serious condition. In their particular industry Inventory Turnover of about four times a year was the standard. Connected with one of the concerns was a young man of vision. Strangely enough, he too, turned to the automobile industry for guidance. Two years later, by the application of the Principles of Management he was able to discover from an intimate study of the automotive industry, his company turned its Inventory twelve times. Its Inventory was approximately $700,000; its Gross Sales, $12,000,000; its Net Profits, $2,000,000. Its larger competitor, with Sales of $16,000,000, had an Inventory of $3,000,000 and Profits of $1,000,000.

As an illustration, it is almost needless to mention Henry Ford's revolution of the Plate Glass Industry by the application of modern automotive practices.

Ratios in Twenty-nine Industries

I have a statement of ratios in twenty-nine different Industries for the year 1926, compiled by the National Credit Office of New York City. These figures are tabulated from the records of more than 1,500 separate units in the various industries. Unfortunately, these ratios are not standards; they are merely averages, based upon the statements of these concerns which represent the better risks of banking circles. Time does not permit us to discuss in detail any of these figures, interesting as they may be. Let me mention, however, one or two salient facts, to illustrate a point I wish to make.

I note that figures for the Return on Net Sales run from a loss of 3.82 per cent to a profit of 9.04 per cent for the Return on Capital Invested from a loss of 5.75 per cent to a Profit of 17.67 per cent.

I note that by some peculiar coincidence the Hosiery Manufacturing figures immediately follow the Cotton Cloth Manufacturing figures, and that while the Hosiery Manufacturers made a return on Net Sales of 8.93 per cent, and on Net Worth 17.67 per cent, the Cotton Cloth Manufacturers show a loss on Net Sales of .73 per cent and on Net Worth a loss of 1.55 per cent.

I suppose the average man would say that the rising skirt dispersed the Profits of the Cotton Cloth Manufacturers and raised the Profits of the Hosiery Manufacturers. I wonder if the fact that the Hosiery Manufacturers' better ratio of Quick Assets to Quick Liabilities, or better Turnover of Net Assets, or better Turnover of Inventory, or less proportion of Net Worth tied up in Fixed Assets, or better ratio of Net Worth to Current Liabilities, or less percentage of Working Capital tied up in Inventory, may not all have been contributing factors.

I am certain that the Retail Furniture Dealer, with a collection period of 231 days, might draw some profitable lessons from the Meat Packers, with a collection period of 17 days. I am equally certain that the Automobile Finance Industry, with 311 per cent of Net Worth represented by Total Debt, would be in a sounder position if it studied the situation from the point of view of the Flour Miller, with 15.3 per cent of Net Worth represented by Total Debt, or of the Manufacturers of Light and Heavy Machines with 16.1 per cent of Net Worth represented by Total Debt. Stated another way: when Turnover of Net Worth can run from .88 of one turn per year to 7.93 turns per year, there is an opportunity for some constructive analysis and thought. When Turnover of Working Capital can run from 1.76 times to 13.66 times, there is opportunity for constructive analysis and thought. When collection periods can run from 17 days to 231 days, there is opportun-

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ity for constructive analysis and thought. When Inventory Turnover can run from three times to twelve times, when Net Worth represented by Fixed Assets can run from 76 per cent to 1.8 per cent, when Working Capital tied up in Inventory can run from 39.5 per cent to 194 per cent, there must be an opportunity for constructive thought and analysis.

No Standards Generally Available

The practical application of the theory I have outlined has been surrounded with such difficulties in the past as to make it almost impossible. There are no standards generally available. Business men have been very reluctant in the past to make the statistics available. There has been no uniformity in the methods of reporting, or in the establishing of the standards. Heretofore, there has been a very general feeling that the vital statistics of a business should be kept secret. Bruce Barton, in a talk before the Boston Chamber of Commerce on March 17th, said, "If I may venture to rush in where angels fear to tread, I might remark that the motor car industry which has the fewest secrets, which opens its doors to the whole world and tells its business to everybody, is today's most successful industry. And the textile industry, which has most carefully guarded its inner workings from any unsanctified eyes, is almost at the other end of the list." Recently, the tendency has been toward cooperation. With a growing realization of the importance of standards, or measures of business efficiency, and with no such statistics to which to turn, business men have been cooperating more generally in producing the necessary figures.

Our banking institutions have been particularly alive to the problem. They have been exerting a very powerful influence toward the establishing of proper standards. Such agencies as the Robert Morris Associates and the National Credit Office, have been pioneers in this work. Such an organization as the Cost Association of the Paper Idustry, I am glad to say is now engaged in a study of the Paper Industry, which will be of the greatest value to that industry.

You, in your national organization, have it in your power to perform a most important work, a work that would be a monument to your foresight and vision. I can conceive of no greater contribution to industry than a thorough and complete study of standards in industry. I am told that your local chapter represents approximately sixty-five businesses, your National Organization represents many thousands of businesses. If I were a member of your organization, I would suggest that the forthcoming year or two be devoted to the analysis, preparation, and reporting of standards for the guidance of your constituent membership. Measures of business efficiency, far more complete, far more correct than now available, could be procured, and the benefits to industry as a whole would be incalculable.

Summary

In closing, I will merely summarize briefly the thoughts I wish to leave with you:

First, We, as accountants, are prone to "develop the means until they are quite inconsistent with the object to be attained."

Second, There are certain fundamentals—"Principles of Business Conduct" they have been called—which must be observed if the greatest measure of business success is to be attained.

Third, The most important of these Principles is "Knowledge, thorough and specific"—in production, in finance, in merchandising—and we, as accountants, are functionally responsible for its development and practical application in industry.

Fourth, The Facts of a Balance Sheet, Profit and Loss Statement, Operating Statement, or Cost Statement, may be interesting of themselves, but they do not constitute "knowledge, thorough and specific."

Fifth, The relationships and ratios of a Balance Sheet, Profit and Loss Statement, Operating Statement, or Cost Statement, may be of more interest, but they do not constitute "knowledge, thorough and specific."

Sixth, There are certain Measures of Business Efficiency, established by competition in industry, which are essential to "knowledge, thorough and specific."

Seventh, Only when such Measures of Business Efficiency are available from all branches of industry, and only as the principles disclosed by them are applied to the specific industry, and the individual in that industry, can we say that we have "knowledge, thorough and specific."

Eighth, I can think of no agency better qualified than the National Association of Cost Accountants, and I would like to see it undertake the great task of standardizing, codifying, and establishing for Industry in America, the Measures of Business Efficiency which would be instrumental in keeping American Industries in the first rank.

De Luxe Edition by Oxford Paper Co.

An unusually beautiful book has been issued by the Oxford Paper Company. It was printed by William Edwin Rudge and is a credit both to the printer and the Oxford Paper Company. This book is built on monumental proportions, the size of a single page being 13 x 19. It is bound in boards covered with an Oxford stock which has been printed in a light tone of green carrying a fleur de lis flowered design. After printing, the cover stock has been varnished, which gives the cover a very rich appearance.

The first impression upon opening the book is of very large, smooth, beautifully finished pages of the high quality paper made by the Oxford Paper Company. Each page, in its smoothness and chastity, is a tribute to the quality of their product.

The book has many outstanding features. One of these is a series of oil paintings showing the interior of the mill and the machinery used in the various departments and the different operations of paper making. These painting were made by an artist at the mill so that all the machinery is shown with technical exactitude and very clearly illustrate the different steps in paper making. These illustrations are printed in four colors and are perfect examples of the color printing that is possible with Oxford papers.

The pages are all French fold and each page is of a different stock. The paper represented, in addition to the well-known Polar Coated, which is shown in white and ivory, are Oxford Polar Dull Coated, Oxford Folding Coated, North Star Coated, super and machine finish.

In addition to the pages devoted to pictures and descriptions of the Oxford Paper Mill and Rumford, Maine, there are a number of other fine specimens of printed work specially selected and printed to show the remarkably good results obtainable on the various finishes and colors of each line of stock. These specimens are masterpieces of the printer's and paper maker's art.

This de luxe edition is unusually interesting. It has been issued in a limited number only. It can be seen either at the Oxford Paper Company's office, 200 Fifth Avenue, New York City, or in the offices of any of their distributors.

W. H. Shuart Celebrates 75th Birthday

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., September 27, 1927.—William H. Shuart of 156 Mill street, president and treasurer of the Springfield Glazed Paper Company, celebrated his 75th birthday last Thursday. He was at his desk as usual. During the day he was presented by his employees with a desk set.

Mr. Shuart who came to this city about 20 years ago to take the presidency of the Company is a graduate of Syracuse University 1875 and had practiced law at Rochester, N. Y. before coming to Springfield. He has served as president of the Rotary club, of the Springfield Chamber of Commerce and is a member of the Colony and other clubs.

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SUPERCALENDERED and MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

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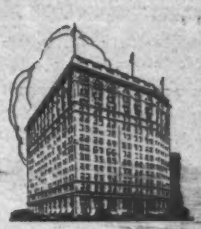

Concentrate

your paper-buying from leading manufacturers in The Fifth Avenue Building

Begin your New York buying trip at The Fifth Avenue Building. It is the logical place. For here you will find the New York offices and salesrooms of the leading paper merchants, mill supply manufacturers and mill engineers. You can complete your seasonal needs in one building and on one buying trip. Convenience of location, a pleasant atmosphere, and association with successful business men combine to make this the most satisfactory place to do your buying.

The location of The Fifth Avenue Building itself puts you within easy reach of all up-town and down-towr New York. You are ten minutes by subway from the Pennsylvania Station. Thirteen from Grand Central. Near leading hotels, and theatres. Two elevated lines are but two blocks away. Busses and surface lines pass the door.

The FIFTH AVENUE BUILDING

Broadway and Fifth Avenue,

at Madison Square, New York

"More than an office building"

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING OCTOBER 1, 1927

SUMMARY

Cigarette paper .....168 cs.
Wall paper .....34 bls., 11 pkgs., 7 cs.
Paper hangings .....17 bls., 8 cs.
News print .....5,129 rolls
Printing paper .....132 cs.
Wrapping paper .....320 rolls, 12 cs.
Packing paper .....21 cs.
Drawing paper .....12 cs.
Filter paper .....5 cs.
Crepe paper .....1 cs.
Cover paper .....1 cs.
Decalcomania paper .....35 cs.
Surface coated paper .....214 cs.
Gold coated paper .....8 cs.
Baryta coated paper .....102 cs.
Tissue paper .....23 cs.
Writing paper .....7 cs.
Envelopes .....44 cs.
Straw board .....677 rolls
Miscellaneous paper
184 rolls, 554 bls., 63 pkgs., 314 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Liberty, Havre, 88 cs.
Standard Products Corp., Ile de France, Havre, 80 cs.

WALL PAPER

F. J. Emmerich, Minnesota, London, 3 bls.
A. C. Dodman, Jr., Inc., Arabic, Antwerp, 5 pkgs.
Globe Shipping Co., New York, Hamburg, 9 bls.
F. Blank, New York, Hamburg, 5 cs., 6 pkgs.
F. Henjes, Jr., Homeric, Southampton, 1 cs.
A. C. Dodman, Jr., Inc., Aquitania, Southampton, 1 cs., 22 bls.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 6 bls.
W. H. S. Lloyd & Co., Minnesota, London, 8 bls., 5 cs.
Whiting & Patterson Co., Inc., Homeric, Southampton, 1 cs.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 2 cs.
F. J. Emmerich, Ile de France, Havre, 3 bls.

NEWS PRINT

Box Board & Lining Co., Muenchen, Bremen, 118 rolls.
New York Telegram, Humberarm, Corner Brook, 3,436 rolls.
Bank of Montreal, Humberarm, Corner Brook, 693 rolls.
Hudson Trading Co., Etna, Sundsvall, 174 rolls.
Perkins, Goodwin & Co., Sierra Ventana, Bremen, 410 rolls.
A. S. Zabriskie, Sierra Ventana, Bremen, 195 rolls.
Parsons & Whittemore, Inc., Sierra Ventana, Bremen, 103 rolls.

PRINTING PAPER

Heemsoth, Basse & Co., New York, Hamburg, 25 cs.
Keuffel & Esser Co., New York, Hamburg, 82 cs.
Walker, Goulard, Plehn Co., Sierra Ventana, Bremen, 25 cs.

WRAPPING PAPER

R. Wilson Paper Corp., Saco, Antwerp, 186 rolls.
F. C. Strype, Arabic, Antwerp, 4 cs.
Birn & Wachenheim, Arabic, Antwerp, 8 cs.
Arkell Safety Bag Co., Stockholm, Gothenburg, 134 rolls.

PACKING PAPER

International Forwarding Co., Veendam, Rotterdam, 6 cs.
Haule Wax Paper Manfg. Co., Thuringia, Hamburg, 10 cs.
International Forwarding Co., Thuringia, Hamburg, 5 cs.

DRAWING PAPER

Kolesch & Co., American Shipper, London, 1 cs.
H. Reeve Angel & Co., Inc., Minnesota, London, 8 cs.
Keuffel & Esser Co., New York, Hamburg, 5 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Minnesota, London, 5 cs.

CREPE PAPER

Van Oppen & Co., New York, Hamburg, 1 cs.

COVER PAPER

International Forwarding Co., New York, Hamburg, 1 cs.

DECALCOMANIA PAPER

C. W. Sellers, Muenchen, Bremen, 1 cs.
C. W. Sellers, New York, Hamburg, 7 cs.
B. F. Drakenfeld & Co., Adriatic, Liverpool, 11 cs.
B. F. Drakenfeld & Co., Adriatic, Liverpool, 16 cs. (simplex),

SURFACE COATED PAPER

P. C. Zuhlke, Arabic, Antwerp, 80 cs.
Gevaert Co. of America, Arabic, Antwerp, 97 cs.
National City Bank, Muenchen, Bremen, 37 cs.

GOLD COATED PAPER

F. Murray Hill, Muenchen, Bremen, 4 cs.
F. Murray Hill, S. Ventana, Bremen, 4 cs.

BARYTA COATED PAPER

Globe Shipping Co., S. Ventana, Bremen, 102 cs.

TISSUE PAPER

Wertheimer Bros., Bengal Maru, Yokohama, 5 cs.
J. B. Mast & Co., G. Verdi, Genoa, 14 cs.

WRITING PAPER

American Express Co., Liberty, Havre, 2 cs.
L. Bamberger & Co., Liberty, Havre, 1 cs.
The Eleto Co., New York, Hamburg, 2 cs.
American Express Co., Aquitania, Southampton, 2 cs.

ENVELOPES

J. Beckhard, Muenchen, Bremen, 44 cs.

STRAW BOARD

Perkins, Goodwin & Co., Veendam, Rotterdam, 28 rolls.
Haas Bros., Veendam, Rotterdam, 210 rolls.
Spaulding & Tewksbury, Veendam, Rotterdam, 205 rolls.
A. Vuyk, Veendam, Rotterdam, 234 rolls.

MISCELLANEOUS PAPER

Heemsoth, Basse & Co., Veendam, Rotterdam, 63 pkgs.
Tamm & Co., Veendam, Rotterdam, 10 cs.
J. Beckhard, Veendam, Rotterdam, 34 cs.
Perkins, Goodwin & Co., Thuringia, Hamburg, 71 rolls, 28 bls., 193 cs.
Steiner Paper Corp., Oscar II, Copenhagen, 55 bls.
Manhattan Paper Co., Stockholm, Gothenburg, 108 bls., 24 rolls.
Arkell Safety Bag Co., Stockholm, Gothenburg, 88 rolls.
M. M. Cohen, Stockholm, Gothenburg, 25 bls.
The Borregaard Co., Inc., Stockholm, Gothenburg, 328 bls.
E. H. Sergeant & Co., Stockholm, Gothenburg, 2 cs.
Keller Dorian Paper Co., Ile de France, Havre, 21 cs.
Canson & Montgolfier, Ile de France, Havre, 25 cs.
Stern Bros., Ile de France, Havre, 12 cs.
Coenca Morrison Co., Ile de France, Havre, 1 cs.
Guibout freres, Ile de France, Havre, 7 cs.
Titan Shipping Co., Ile de France, Havre, 7 cs.
R. Wilson Paper Corp., Ile de France, Havre, 2 cs.

RAGS, BAGGINGS, ETC.

Bank of The Manhattan Co., African Prince, Dundee, 28 bls. paper stock.
Fidelity Trust Co., Blair, Leghorn, 183 bls. rags.
E. J. Keller Co., Inc., Blair, Marseilles, 197 bls. rags.
A. W. Fenton, Inc., Muenchen, Bremen, 9 bls. bagging.
Castle & Overton, Inc., Saco, Antwerp, 128 bls. flax waste.
Equitable Trust Co., Saco, Antwerp, 103 bls. flax waste.
E. J. Keller Co., Inc., Saco, Antwerp, 524 bls. flax waste.
E. A. Stone, Liberty, Havre, 7 bls. rags.
Castle & Overton, Inc., Liberty, Havre, 171 bls. rags.
Mutnick Bros., Liberty, Havre, 19 bls. rags.
V. Galaup, Liberty, Havre, 153 bls. rags.
E. Mayer, Liberty, Havre, 267 bls. rags.
V. Galaup, Liberty, Dunkirk, 201 bls. rags.
E. Butterworth & Co., Inc., Liberty, Dunkirk, 52 bls. rags.
Salomon Bros. & Co., Liberty, Dunkirk, 20 bls. rags.
Bulkley, Dunton & Co., Veendam, ——, 44 bls. thread waste.
E. Butterworth & Co., Inc., Bristol City, Bristol, 698 bls. rags.
Equitable Trust Co., Adriatic, Liverpool, 62 bls. bagging.
Equitable Trust Co., Adriatic, Liverpool, 34 bls. rags.
E. Butterworth & Co., Inc., Adriatic, Liverpool, 76 bls. rags.
Basch & Greenfield, Adriatic, Liverpool, 6 bls. rags.
A. C. Fetterolf, Adriatic, Liverpool, 32 bls. rags.
Mutnick Bros., Alriatic, Liverpool, 17 bls. rags.
J. T. Lodge, Adriatic, Liverpool, 22 bls. rags.
B. D. Kaplan, American Shipper, London, 39 bls. rags.
Basch & Greenfield, American Shipper, London, 2 bls. rags.
A. H. Searle, Inc., American Shipper, London, 41 bls. rags.
Brown Bros. & Co., New York, Hamburg, 20 bls. rags.
Amsinck, Sonne & Co., Inc., California, Glasgow, 7 bls. paper stock.
Castle & Overton, Inc., California, Glasgow, 53 bls. paper stock.
W. Barnet Son, Inc., Laconia, Liverpool, 17 bls. rags.
National City Bank, Rigel, Genoa, 42 bls. bagging.
Fidelity Trust Co., Rigel, Leghorn, 159 bls. rags.
Banco Commerciale Italian Trust Co., Yaye Maru, Naples, 139 bls. rags.
E. J. Keller Co., Inc., West Eldara, Antwerp, 95 bls. rags.
Castle & Overton, Inc., West Eldara, Antwerp, 64 bls. rags.
I. Heuerfeld, West Eldara, Antwerp, 6 bls. rags.
A. W. Fenton, Inc., Alberta, Trieste, 372 bls. rags.
National City Bank, S. Ventana, Bremen, 115 bls. bagging.
Lowenthal, Liebowitz & Co., Stockholm, Gothenburg, 27 bls. rags.
E. J. Keller Co., Inc., Oregonian, Antwerp, 1 ble. rags.
Bulkley, Dunton & Co., Hamburg, ——, 177 bls. rags.
Castle & Overton, Inc., Tigre, France, 69 bls. rags.
Castle & Overton, Inc., Tigre, France, 118 bls. bagging.

OLD ROPE

Brown Bros. & Co., Veendam, Rotterdam, 158 bls.
Brown Bros. & Co., Bristol City, Bristol, 197 coils.
Brown Bros. & Co., Arabic, Antwerp, 66 bls.
E. Butterworth & Co., Inc., Adriatic, Liverpool, 5 bls.
Robert Blank, Rigel, Leghorn, 58 rolls.
H. J. Reed, S. Ventana, Bremen, 68 bls.

CASEIN

T. M. Duche & Sons, American Legion, Buenos Aires, 834 bags.

WOOD PULP WADDING

Hensel, Bruckman & Lorbacher, Veendam, Rotterdam, 40 bls.

WOOD PULP BOARDS

Fibre Case & Novelty Co., Stockholm, Gothenburg, 63 bls.

WOOD PULP

M. Gottesman & Co., Inc., Veendam, Rotterdam, 985 bls. wood pulp.
D. M. Hicks, Inc., New York, Hamburg, 123 bls. wood pulp, 25 tons.
Perkins, Goodwin & Co., Oscar II, Copenhagen, 254 bls. wood pulp.
J. Anderson & Co., Alberta, Trieste, 135 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Etna, Skutskar, 405 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Etna, Sundsvall, 1,500 bls. sulphate, 300 tons.
Scandinavian Pulp Agency, Inc., Etna, Sundsvall, 1,125 bls. sulphite, 225 tons.
Johanson, Wales & Sparre, Inc., Etna, Sundsvall, 625 bls. sulphite, 125 tons.
Johanson, Wales & Sparre, Inc., Etna, Sundsvall, 450 bls. sulphite, 75 tons.
Castle & Overton, Inc., Etna, Sundsvall, 399 bls. sulphite, 66 tons.
M. Gottesman & Co., Inc., Etna, Sundsvall, 500 bls. sulphite, 100 tons.
Bulkley, Dunton & Co., Etna, ——, 1,250 bls. wood pulp, 250 tons.
American Exchange Irving Trust Co., S. Ventana, Bremen, 247 bls. wood pulp.
J. Anderson & Co., Tyrifjord, Sarpsborg, 990 bls. sulphite.
Buck, Kiaer & Co., Inc., Tyrifjord, Oslo, 2,250 bls. sulphite.
Buck, Kiaer & Co., Inc., Milos, Sikea, 6,000 bls. sulphite.

(Continued on page 74)

Brutes for Service!

WHEN minutes are money and you crowd on the power, Crescents will grip and hold the belt — maintain uninterrupted operation under the heaviest strains. If the belt will hold the load Crescents will hold the belt, day in — day out, and withstand the roughest usage.

Crescent Belt Fasteners distribute the strain evenly across the entire belt and reinforce it at the joint. Curved — they hug the pulley and hold the power.

Belt ends, when jointed the Crescent way, are held with a vise-like grip. Each rivet grips the lengthwise fibres, leaving no gaping holes to widen or stretch, no cracking of belt at joint. Crescent Belt Fasteners become part of the belt itself, help it bear the strain of production—deliver the utmost in power.

Cross section showing the vise-like grip of Crescents.

Write for Hand Book on Proper Belt Joining

CRESCENT BELT FASTENER COMPANY

247 Park Avenue, New York, N. Y.

CRESCENT BELT FASTENERS

Recommended by Belting Manufacturers

Exactly what the name implies—smooth and swift in action and really automatic. The whole cutting cycle takes a trifle less than three seconds.

The C & P Automatic Cutter

Shown at the Graphic Arts Exposition September 5-17

THE C & P Automatic Cutter is unique in that the clamping act is completed before the knife enters the pack. With a quick-twist-and-pull-up on the control lever (one movement), the binder is released, squeezes out the air, and holds the pack rigidly.

Down comes the knife instantly, pulled (not pushed) along the line of travel by two powerful drawbars, in a double rocking shear motion—straight, true, absolutely without draw or chatter.

Long life, smooth operation and minimum of adjustment, and quick, accurate cutting are further promoted by such features as these:

Simple controlling mechanism and safety pin which prevent accidental starting or repeating; accident-proof, fool-proof. Oversize 32-point-contact clutch, block type.

Three-part back gauge. Very convenient oiling system. Oiling easily done through metal tubes clustered at sides. Heavy, oversize, powerful brake.

Ample scraped bearings; rollers hardened, cams surface chilled. Balanced fly-wheel, supported by ample bearings, on inside of massive, one-piece base, ends deadly vibration.

We can't begin to finish the story here. May we send you our brochure on The C & P Automatic Cutter?

Chandler & Price
PAPER CUTTERS & PRESSES

The CHANDLER & PRICE CO. *Cleveland, U. S. A.*

Imports of Paper and Paper Stock

(*Continued from page 72*)

WOOD FLOUR

A. Kramer & Co., Veendam, Rotterdam, 300 bags.
E. M. Sergeant & Co., Oscar II, Copenhagen, 339 bags.
H. J. Baker & Bros., Ambridge, Rotterdam, 1,200 bls., 60,000 kilos.
B. L. Soberski, Tyrifjord, Frederickstad, 5,025 bags.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 1, 1927

2nd National Bank of Boston, African Prince, Leith, 60 bls. bagging.
J. Lang Paper Co., Saco, Antwerp, 17 bls. rags.
MacBlaine & Co., Saco, Antwerp, 62 bls. rags.
M. Friedman, Saco, Antwerp, 111 bls. rags.
Bank of The Manhattan Co., Bristol City, Bristol, 364 bls. rags.
J. A. Steer & Co., Bristol City, Bristol, 80 coils old rope.
J. A. Steer & Co., Bristol City, Bristol, 167 bls. waste paper.
Lagerloef Trading Co., Argosy, Kotka, 167 bls. wood pulp boards.
Pagel, Horton & Co., Inc., Argosy, Husum, 6,000 bls. sulphate, 1,000 tons.
Pagel, Horton & Co., Inc., Argosy, Hornefors, 1,200 bls. sulphite, 200 tons.
Perkins, Goodwin & Co., Argosy, Obbola, 3,500 bls sulphite, 500 tons.
Philadelphia Bulletin, Humberarm, Corner Brook, 6,034 rolls news print.
Philadelphia Record, Humberarm, Corner Brook, 329 rolls news print.
Paper House of Phila., Humberarm, Corner Brook, 72 rolls news print.
Robert Blank, Bankdale, Marseilles, 170 bls. rags.
Castle & Overton, Inc., New York City, England, 108 bls. rags.
Castle & Overton, Inc., Gustavsholm, Sweden, 600 bls. wood pulp.
E. J. Keller Co., Inc., Californian, ——, 104 bls. rags.
E. J. Keller Co., Inc., Bankdale, Barcelona, 238 bls. rags.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 1, 1927

Dixie Jute Bagging Corp., West Eldara, Antwerp, 31 bls. bagging.
British American Tobacco Co., West Eldara, Antwerp, 71 cs. printed cigarette wrappers.
Reis & Co., Ambridge, Rotterdam, 164 bls. bagging.
Buck, Kiaer & Co., Inc., Mexicano, Oslo, 200 bls. sulphite.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 1, 1927

A. W. Fenton, Inc., Liberty, Havre, 63 bls. rags.
Congoleum Nairn Co., Liberty, Havre, 1,052 bls. rags.
Congoleum Nairn Co., Liberty, Dunkirk, 100 bls. rags.
Congoleum Nairn Co., West Eldara, Antwerp, 681 bls. rags.
Brown Bros. & Co., West Eldara, Antwerp, 210 bls. rags.
Pagel, Horton & Co., Inc., Argosy, Domsjo, 1,860 bls. wood pulp, 310 tons.
Johanson, Wales & Sparre, Inc., Argosy, Obbola, 1,050 bls. sulphate, 150 tons.
Pagel, Horton & Co., Inc., Argosy, Hornefors, 5,100 bls. sulphite, 850 tons.
Bulkley, Dunton & Co., Saga, ——, 4,050 bls. wood pulp.
Buck, Kiaer & Co., Inc., Fredensbro, Sikea, 3,000 bls. sulphite.
Buck, Kiaer & Co., Inc., Fredensbro, Iggesund, 375 bls. sulphite.
Buck, Kiaer & Co., Inc., Fredensbro, Iggesund, 125 bls. kraft pulp.

BOSTON IMPORTS

WEEK ENDING OCTOBER 1, 1927

Scandinavian Pulp Agency, Inc., Etna, Skutskar, 425 bls. wood pulp, 55 tons.
Johanson, Wales & Sparre, Inc., Etna, Sundsvall, 2,900 bls. sulphite, 560 tons.
Bulkley, Dunton & Co., Etna, ——, 1,300 bls. wood pulp, 300 tons.
Bulkley, Dunton & Co., West Campgaw, ——, 245 bls. rags.
Bulkley, Dunton & Co., West Campgaw, ——, 375 bls. wood pulp.
Bulkley, Dunton & Co., Norwegian, ——, 135 bls. wood pulp.
Buck, Kiaer & Co., Inc., Korsholm, Stockholm, 600 bls. sulphite.
Pagel, Horton & Co., Inc., Argosy, Domsjo, 3,270 bls. sulphite, 545 tons.
Pagel, Horton & Co., Inc., Argosy, Hornefors, 1,200 bls. sulphite, 200 tons.
Perkins, Goodwin & Co., Argosy, Obbola, 3,850 bls. sulphate, 550 tons.
Robert Blank, Pipestone County, Havre, 208 bls. rags.
Castle & Overton, Inc., J. Skinner, Germany, 41 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING OCTOBER 1, 1927

Castle & Overton, Inc., Ontario, France, 300 bls. rags.
Castle & Overton, Inc., Topa Topa, England, 84 bls. rags.
E. J. Keller Co., Inc., F. Luckenbach, ——, 50 bls. rags.
E. J. Keller Co., Inc., F. Luckenbach, ——, 200 bls. bagging.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 5, 1927.—The Bureau of Supplies & Accounts, Navy Department, will receive bids on October 11 for 3,000 pounds of 54 inch crinkled Kraft waterproof paper.

The Government Printing Office has just announced a number of paper awards.

The R. P. Andrews Paper Company will furnish 1,000 sheets of 26x43 sensitized paper at $36.40 per ream, bids for which were received on August 31.

C. B. Hewitt & Bros. Company will furnish 20,000 sheets (14,285 pounds) of 22x32 marble grained jute board at .041225 cents per pound, bids for which were received on August 24.

The Davey Company will furnish 36,000 pounds (18,500 sheets) of various sizes best quality binders board at .04975 cents per pound, bids for which were received on August 17.

The Mathers-Lamm Paper Company will furnish 40,000 pounds (1600 sheets) of 25x30, No. 2 quality binders board at .031 cents per pound, bids for which were received on August 10.

James E. Mitchell Dead

UTICA, N. Y., October 1, 1927.—James E. Mitchell died suddenly, a victim of heart disease, at his home, 1424 Genesee street, September 22. Mr. Mitchell was president and treasurer of the Utica Paper Company, Inc., president of the Board of Education, the father of six children and held membership in several Utica fraternal organizations.

James Edward Mitchell was born in Utica Dec. 11, 1879, a son of Charles and Annie C. Mitchell. He was educated in local public school, Assumption Academy and Manhattan College. His first employment was as traveling passenger agent for the New York Central Railroad. He served two years in this position. About 24 years ago he entered the wholesale paper business and organized the Utica Paper Company, of which he was owner.

Several years ago he organized the American Toilet Paper Company of which he had since been president and treasurer. In March the Utica Paper Company was merged with the Little Falls Paper Company, and the Utica Paper Company, Inc., succeeded both, doing business at 16 Genesee street.

Mr. Mitchell was a member of the Utica Chamber of Commerce. During the World War he served as a member of the Liberty Loan publicity committee. He was elected in 1922 as a Democratic member of the Board of Education and in 1925 was re-elected. From the first, he served as president of the board.

His fraternal connections included membership in the Democratic Club of Oneida County, the City Club, Utica Lodge, No. 33, B. P. O. Elks, the New York Athletic Club, the Automobile Club of Utica and Central New York, Rotary Club, Utica Council, No. 189, Knights of Columbus, and the fourth degree in this order.

Mr. Mitchell's marriage to Elizabeth Liddy took place in 1906. Besides his widow and mother, he leaves six children: Elizabeth, Margaret, Marion, James E., Jr., Rita and Charles; three brothers, Frank of Elmira and Thomas and John of Utica, and one sister, Mrs. Harry F. Faville of New Rochelle.

New Type of Cellophane

WILMINGTON, Del., October 1, 1927.—The Du Pont Cellophane Company announces a new type of Cellophane known as Moistureproof Cellophane. The new product has unusual protective qualities in both retaining the moisture content of the article around which it is wrapped, and also keeping out the moisture from the air when this is desired. In the baked goods, candy and food products fields as well as in other fields, it is believed that the new product will enjoy large usage.

WOODPULP
AGENTS

PRICE & PIERCE, Ltd.,

17 EAST 42ND ST.,
NEW YORK

Sulphur

A FIRST REQUISITE

IN

Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO.
41 E. 42nd Street, New York City
Mine Gulf, Matagorda County, Texas

DRY PAPER EFFICIENTLY

The Fulton Dryer Drainage System

—Increased Production
—Decreased steam pressure on the dryers
—Reduced steam cost for drying

Better Sheet—Better Finish—Less Shrinkage

—and cockling prevented by drying with graduated temperature—Less pressure or vacuum on paper machine dryers.

We will gladly refer you to mills using the Fulton System and making the same grade of paper as you. They will tell you their experience with the Fulton System.

U. S. Patents Dec. 10, 1919, and June 7, 1921. Canadian Patents July 6, 1920, also patents pending

Fulton Engineering Co.
MIDDLETOWN, OHIO

Canadian Representatives: THE SEFFRIDGE SUPPLY CO., Ltd., 488 St. Paul St. W., Montreal, Canada

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, October 5, 1927.

Some improvement was noticed in the demand for the various grades of paper during the past week and the local market exhibited a sound undertone. The volume of inquiries received is reported to be expanding and the outlook for the near future is more promising. In most instances prices are holding up to previously quoted levels and shading is infrequent.

News print paper is in better request than for some time. Spot supplies are more limited than of late and there are no undue accumulations, despite the heavy production which has been maintained since the beginning of the year. Quotations remain steady to firm although there is some speculation over the contract prices for the coming year.

Production of the various grades of paper board has been somewhat heavier. Demand continues excellent and the recently advanced prices are generally being maintained. Fine papers are also in increased request. Tissues are moving at a steady pace. The wrapping paper market is active and business is expected to expand still further during the closing months of the year.

Mechanical Pulp

Although conditions in the ground wood market have not changed, the mills are beginning to take more interest in both the imported and the domestic grades. Contract withdrawals continue to move in a normal manner. Manufacturers are receiving a fair number of inquiries for future business. Quotations are steady.

Chemical Pulp

While there is a moderate request for both foreign and domestic chemical pulp, the market is somewhat weaker. This condition, however, is believed to be only temporary. Imported bleached sulphite is now quoted at from $3.40 to $4.50 per 100 pounds, ex dock, Atlantic ports. Quotations on many of the other foreign and domestic grades have also declined slightly.

Old Rope and Bagging

Domestic old rope is in fairly good demand. More interest is also being displayed in foreign old rope. Prices generally remain unaltered. Trading in the bagging market is gradually becoming more lively. Scrap bagging and burlap cuttings are being absorbed at a satisfactory rate. Prices remain unchanged.

Rags

No radical developments transpired in the rag market last week. With production expanding at the paper mills, however, it is felt that manufacturers will soon be in the market to replenish their supplies and more lively trading is anticipated from now on to the end of the year. Prices of the various grades are unaltered.

Waste Paper

Steadiness continues to prevail in the paper stock market. The lower grades are in specially good request at present, although the higher grades are rather neglected. Quotations are holding up to recent levels in most instances. The only recent changes recorded are on container manilas and No. 1 mixed paper, which are now offered at from .70 to .80, and at from .57½ to 62½.

Twine

Most of the business transacted in the twine market during the past week was along routine lines. The recent advances in the cotton grades were maintained without difficulty. Dealers are reported to be firm in their views and a steadier market may materialize in the near future.

CONFERENCE AT HOLYOKE

(*Continued from page 38*)

Stevenson, Storrs & Bement Company, Boston, Mass.; Clark Simmons, W. H. Smith Paper Company, Albany, N. Y.

A. C. Thomas, F. A. Flinn, Inc., New York City; H. B. Thurston, Conrow Brothers, New York City; A. A. Tanyane, THE PAPER TRADE JOURNAL, New York City; G. R. Tolen, Midland Paper Company, Chicago, Ill.; W. M. Temple, Globe Paper Company, Boston, Mass.

C. K. Urquhart, Urquhart Paper Company, New York City.

C. T. Waite, John Carter & Company, Boston, Mass.; H. E. Waite, John Carter & Company, Boston, Mass.; K. S. Warner, John F. Sarle Company, Inc., New York City; H. A. Washburn, Messinger Paper Company, Chicago, Ill.; H. W. Walstrom, Quimby-Kain Paper Company, Grand Rapids, Mich.; L. A. Walden, Walden Sons & Mott, New York City; C. C. Walden, Walden Sons & Mott, New York City; John Walsh, Cleveland Paper Company, Cleveland, Ohio; J. R. Whitney, Meek & Whitney, Inc., Springfield, Mass.; Frank Wright, Acme Paper Company, St. Louis, Mo.

R. L. Allison, U. S. Envelope Company, Springfield, Mass.; C. R. Bell, Old Colony Envelope Company, Westfield, Mass.; F. A. Day, Morgan Stationery Company, Springfield, Mass.; Henry Emery, U. S. Envelope Company, Springfield, Mass.; C. E. Mack, Old Colony Envelope Company, Westfield, Mass.; F. H. Sellars, Jr., U. S. Envelope Company, Springfield, Mass.; E. L. Wood, P. P. Kellogg Div., Springfield, Mass.; C. H. Barr, Holyoke, Mass.; C. W. Townsend, Logan, Swift & Brigham, Worcester Mass.; N. J. Patterson, P. P. Kellogg, Springfield, Mass.

R. L. Bosworth, Howard Brooks, S. L. Bush, R. H. Casey, P. W. Gridley, L. H. Hulett, T. W. Harrington, C. H. Hill, S. M. Holden, W. B. Holmes, R. H. Morrill, F. J. Roche, H. J. Shanley, E. C. Tucker, M. E. Whitcomb, Gordon Blanchard, A. H. Hill, Ray Lacey, C. W. Small, E. S. Dunbar, W. E. Perry, W. S. Cummings, E. W. Beimfohr, C. A. Crocker, J. E. Holmes, R. F. McElwain.

Dr. J. G. Gilkey; S. L. Willson, president American Writing Paper Company; W. D. Judd, president Carew Manufacturing Company; Irving N. Esleeck, vice president Esleeck Manufacturing Company; Albert R. Smith, treasurer Keith Paper Company; John L. Bagg, Parsons Paper Company; E. P. Bagg, treasurer Parsons Paper Company; H. A. Moses, president Strathmore Paper Company; H. H. Bowman; W. J. Raybold, treasurer B. D. Rising Paper Company; G. Stanley Morse, vice president Valley Paper Company; John Adie, president New York and New England Paper Company.

Binders Board Makers To Meet

The meetings of the Binders Board Manufacturers Association are being held at the mills of the various members this year. The next meeting is scheduled for November 18 at the Kerr Paper Mill, East Downingtown, Pa.

Prompt deliveries made from stocks in
NEW YORK
BOSTON
PHILADELPHIA
CHICAGO

TRADE U MARK

Experience

It counts in manufacturing dyestuffs, as elsewhere. Users of Heller & Merz colors are drawing dividends on the 58 years we have been making quality dyestuffs. They are dividends of satisfaction, which we would like to pay you also.

The HELLER & MERZ COMPANY
505 Hudson St., New York

Boston 287 Atlantic Ave. | Chicago 146 W. Kinzie St. | Philadelphia 114 Market St.

Springfield, Mass.
24 Lester Street

Factory—NEWARK, N. J.

SCHOPPER

Automatic Micrometer

The World's Standard for 45 Years

Shows the thickness or bulk of paper more accurately than any other on the market.

Rapid - Accurate - Durable

Write for Information

"Schopper" Scales,
Tensile Testers,
Folding Testers,
Freeness Testers,
Moisture Testers,
Hygrometers.

FOREIGN PAPER MILLS, INC.
Sole Agents for United States and Canada
72 DUANE ST. NEW YORK

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

Ferguson
ENGINEERS

Design—Build—Rebuild —Report—Appraise

POWER PLANTS *and* COMPLETE PAPER MILL PROJECTS

One organization under one contract guarantees price, delivery date and satisfactory results.

Representative
Ferguson customers in the paper industry:

Hinde & Dauch Co.
A. P. W. Paper Co.
Mead Pulp and Paper Co.
Chillicothe Paper Co.
Warren Mfg. Co.
Spencer-Wynne Paper Company
Bennington Wax Paper Co.
Oswego Falls Corp.
Fairfield Paper Co.

THE H. K. FERGUSON COMPANY
Hanna Bldg. - Cleveland, Ohio Phone: Superior 3620
New York · Detroit · Birmingham · Tokio, Japan

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, October 5, 1927.

Conditions in the local chemical market are improving and the demand from the paper mills is more active than for some time. The volume of inquiries for future business is also growing and the outlook for the closing months of the year is most promising. Contract orders are moving into consumption at a steady pace. Prices are holding up to previously recorded levels with little difficulty.

BLANC FIXE.—Steadiness continues to prevail in the blanc fixe market. Both the pulp and the powder continue in excellent request. Quotations remain unchanged. The pulp is still offered at $60 per ton, in bulk, while the powder is selling at from 4 cents to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER.—Production of bleaching powder is proceeding in sufficient volume to take care of current requirements. Shipments of this product against contract are going forward at a steady pace. Prices remain unaltered. Bleaching powder is still offered at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—Demand for casein is about normal for the time of the year and stocks are moving into consumption in a regular manner. Prices are practically unchanged. Domestic casein is quoted at from 17 cents to 18¼ cents a pound. Imported casein is quoted at from 18 cents to 18¼ cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Consumption of caustic soda is being maintained in satisfactory volume. Contract withdrawals have been excellent of late. Prices are generally holding up to schedule. Solid caustic soda is selling at from $3 to $3.10 per 100 pounds. The flake and the ground are offered at from $3.40 to $3.50 per 100 pounds, in large drums, at works.

CHINA CLAY.—Although trading in the china clay market has been rather quiet recently, the industry is in a sound position and a more lively market is anticipated from now on to the end of the year. English china clay is quoted at from $15 to $25 a ton, ship side. Domestic paper makers' clay is selling at from $8 to $9 a ton, in bulk, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Business in the chlorine market is quite brisk at present. Prices are steady to firm and there is little prospect of concessions in the near future. Chlorine is quoted at 4 cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 4¼ cents to 4½ cents a pound.

ROSIN.—Quotations in the rosin market continue to fluctuate. The prevailing demand is mostly for immediate requirements and orders for future business are scarce. At the naval stores, the grades of gum rosin used in the paper mills are now quoted at from $9.35 to $9.40 per 280 pounds, gross, in barrels, ex dock. Wood rosin is quoted at $9.50 per 280 pounds, southern shipping points.

SALT CAKE.—The undertone of the salt cake market is sound. Demand for this product is excellent for the time of the year. Prices remain practically unchanged. Salt cake is still selling at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is quoted at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Demand for soda ash has been quite up to average of late. Contract withdrawals are proceeding at a steady pace. Prices are holding up to the schedule which has prevailed for some considerable time. Contract quotations on soda ash, in car lots, at works, are as follows; in bulk, $1.20; in bags, $1.32½, and in barrels, $1.57½.

STARCH.—Trading in the starch market was fairly active during the past week. Supplies continue to move into consumption in a satisfactory manner. Prices remain unaltered despite the increased price of raw materials. Special paper makers' starch is still quoted at $3.07 per 100 pounds, in bags, and at $3.24 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Consumption of sulphate of alumina has been well up to average. Contract shipments continue to move in a normal manner. Prices remain steady and unchanged. Commercial grades of sulphate of alumina are selling at from $1.40 to $1.45 per 100 ponnds. The iron free is quoted at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Business in the sulphur market is quite active and future prospects for this product are encouraging. Prices are holding up to schedule, with little difficulty, and concessions are not looked for at present. Sulphur is selling at from $18 to $19 a ton, in bulk, at mine, according to quantity. The spot quotation remains unaltered at $20 per ton.

TALC.—The condition of the talc market is sound and no radical changes have taken place for some time. This product is in seasonal request and supplies are moving into consumption at a normal pace. Quotations on domestic talc range from $16 to $18 a ton, at eastern mines. French talc is still quoted at from $18 to $22 a ton, ship side.

Pioneer Pulp Makers

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., September 24, 1927—Fifty-eight years ago this month the extensive water power in the Hudson River at this place was first used for pulp and paper making. In September 1869 the Hudson River Pulp and Paper Company started a wood pulp mill and a year later secured possession of an unused building and converted it into a paper mill. As the business increased the company expanded and in 1872 erected a new brick mill.

Although the patent for manufacture of wood into pulp for the making of paper was issued in 1861, the pulp mill started by the Hudson River Pulp and Paper Company, was the first concern in the Hudson Valley to use the process. Pulp was made from spruce and poplar logs, the company using about 5,000 market logs, 3500 cords of firewood and 1500 tons of rags every year in producing about ten tons of dry pulp and seven tons of printing paper every twenty-four hours. The Hudson River Pulp and Paper Company, one of the early pioneers of the Hudson Valley pulp and paper industry, was headed, as president and treasurer, by A. Pagenstecker; W. Miller was secretary and Warren Curtic, Jr., superintendent.

All of the machinery was operated by water power. In 1888 five paper machines and other equipment were installed in the paper mill and later a steam plant was built to supplement the water power.

The International Paper Company in 1898 acquired the mills of the Hudson River Pulp and Paper Company. The pulp mill of the Curtis Manufacturing Company, operated by the International Paper Company, was erected in 1914.

One of the interesting things in connection with the history of the International Paper Mill at Corinth is the considerable number of old employes of the Hudson River Pulp and Paper Co., who are still in the service of the International Paper Company. Among these old employes are Charles A. White, deputy, whose service covers 57 years; John Smith, head of the paper loading department, 46 years; William Quinn, blacksmith, 40 years; George Mallory, superintendent of repairs, 37 years; Clifford Denno, head of mill stables, 37 years; Patrick McEwan, asbestos specialist, 32 years; Clarence White, superintendent of the ground wood department, 32 years; Leonard J. Peebles, foreman of wood preparing department, twenty three years.

J. B. Grinling Appointed Sales Manager

KALAMAZOO, Mich., October 3, 1927.—James B. Grinling has been appointed sales manager of the Allied Paper Mills, effective October 1, 1927.

Mr. Grinling merits this promotion, due to his constant efforts and ability, having worked continuously for us in the sales department since the end of the World War.

Clay

300 tons daily

AMERICAN MADE FOR AMERICAN TRADE

AT LAST!!

"An American Coating Clay"

H. T. Brand Coating Clay*, Highest Grade Filling Clay,** being used in some of the largest paper mills in the country. Send for samples and article on ***"An American Coating Clay." Forty-two years experience in American washed clays are back of this product.

Let us submit sample and quote you.

THE

MINER-EDGAR CO.

110 William St.,
NEW YORK

Clay Thin Enough to Pipe

"A-Syrup" or "S" Brand makes clay-water mixtures containing as much as 60% of clay thin enough to be pumped through pipe lines. Either for the beater or for the coating machine, you will find Quartz Quality Silicates economical and convenient for increasing the fluidity of your clay mixes. Ask us for samples and how to do it.

Philadelphia Quartz Co.

Philadelphia, Pa.

Six Plants & Stocks in 32 Cities

HG&CO

H. G. CRAIG & CO.

INCORPORATED

Paper Merchants

(Since 1868)

News

Hanging

Specialties

Mill Supplies

17 East 45th St. NEW YORK, N. Y.

ALPHA FIBRE

Clean and Economical

Alpha takes the place of many grades of rags in the making of fine papers. It maintains your high standards - yet reduces your costs.

Brown Company

PORTLAND, MAINE

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1943	105	107
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	79	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Berkshire Hills Paper, 8s 1941	60	80
Brown Paper Co., 1st 5½s 1946	94	98
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	97	101
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	102	104
Escanaba Paper Serial, 6s 1926-39	94	96
Flier Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	95	100*
Fox River Paper, 7s 1931	99	...
Gair Co. (The Robt.), 7s 1937	104	106
Gilbert Paper Co., 6½s 1926-29	89	...
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	94	96*
Itaska Paper, 1st 6s 1933-38	96	98*
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	103½	105
Menasha Printing & Carton, 6½s 1939	99½	...
Mengel Company, 7s 1926 to 1934	103	...
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Peepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Poland Paper, 7s 1930	98	...
Port Alfred Pulp, 6½s 1943	*96	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
Spanish River Pulp & Paper, 8s 1941	106	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	95½	98*
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	98½	...
Tait Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	95	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wolsb Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	Wanted	...
Whitaker Paper, 7s 1942	106	108
Witmer-Parsons Pulp & Lbr. (Units)	63	70

STOCKS	BID	ASKED
Advance Bag & Paper, 8% Pfd.	100	None
Am. Tissue Mills, 7% Pfd.	95	100
British Columbia P. & P., Pfd.	65	70
Brompton Pulp & Paper, 8% Pfd.	93	98*
Brown Corpn., 7% Pfd.	97	100*
Champion Fibre, 7% Pfd.	105	...
Diem & Wing, 7% Cum. Pfd.	87	...
Donnaconna Paper, Com.	58	...
Donnaconna Paper, Pfd.	99	None
Eastern Mfg. Co., 1st Pfd.	34	37
Great Northern Paper, Com.	72	75
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	150	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	80	85
Midwest Box Co., Pfd. 6%	55	65
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	170	...
Oxford Paper Co., Pfd.	175	...
Penobscot Chemical Fibre, Com.	65	75*
Richardson Co., 7% Pfd.	104	...
Rubberoid Company	68	72
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	101½	104½
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	52	57
West Virginia Pulp and Paper, Pfd.	101	103
Whittaker Paper, 7% Cum. Pfd.	97	103

*Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.75	@ 5.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	50.00	@52.50
Straw	53.50	@57.50
Chip	47.50	@50.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	67.50	@72.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@30.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	27.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40	@ 4.50
Easy Bleaching	2.75	@ 2.90
No. 1 strong unbleached	2.40	@ 2.75
Mitscherlich unBleached	2.55	@ 3.40
No. 2 strong unbleached	2.30	@ 2.40
No. 1 Kraft	2.65	@ 2.90
No. 2 Kraft	2.50	@ 2.60
Sulphate—		
Bleached	3.75	@ 4.00

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.70	@ 2.90
News Sulphite	2.40	@ 2.65
Mitscherlich	3.25	@ 3.70
Kraft (Domestic)	2.70	@ 3.40
Soda Bleached	3.25	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.50	@12.00
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.25	@10.75
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.50	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.00	@ 5.50
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.75	@ 6.50
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	2.50	@ 2.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.60	@ 1.70
No. 1	1.60	@ 1.70
No. 2	1.35	@ 1.45
No. 3	1.25	@ 1.35
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.75	@ 8.50
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.00	@ 7.75
No. 2 White Linens	5.25	@ 6.00
No. 3 White Linens	4.00	@ 4.50
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.70	@ 1.75
Dark Cottons	1.55	@ 1.60
Shoppery	1.50	@ 1.55
French Blues	2.25	@ 2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.80	@ 1.90
Domestic	1.80	@ 1.90
Wool Tares, light	1.60	@ 1.70
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.50	@ 1.65
Manila Rope—		
Foreign	3.25	@ 3.50
Domestic	4.25	@ 4.25
New Burlap Cut	3.00	@ 3.25
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.40	@ 3.65
Hard, White, No. 2	2.90	@ 3.05
Soft, White, No. 1	2.90	@ 3.10
Flat Stock—		
Stitchless	1.30	@ 1.35
Overissue Mag.	1.30	@ 1.35
Solid Flat Book	1.25	@ 1.30
Crumpled No. 1	.90	@ 1.00
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.60	@ 1.70
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.85	@ .95
Container	.70	@ .80
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	2.10	@ 2.20
News—		
No. 1 White News	1.75	@ 1.80
Strictly Overissue	.85	@ .90
Strictly Folded	.70	@ .75
No. 1 Mixed Paper	.57½	@ .62½
Common paper	.35	@ .45

Mill Cogs

ON SHORTEST POSSIBLE NOTICE

We make all kinds of Mill Cogs and have special facilities that will be of great service to you. We make a specialty of "ready dressed" cogs which are

READY TO RUN

the moment driven and keyed. Write at once for circular "G" and instruction sheets free.

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Established 188?

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RHOADS TANNATE LEATHER BELTING

New Installation and Tannate Belting. 25 Years a Rhoads Customer.

A PENNSYLVANIA paper mill installed a lot of new machinery a few months ago. And this 20-inch, 2-ply Rhoads Tannate Leather Belt was put on the following line of machinery:

9 Centrifugal pumps
8 10-plate screens
4 duplex pumps
4 agitators

A 34-inch Rhoads Belt was put on a 100-inch board machine including presses, dryers, calenders and duplex cutter and winder.

They also used 150 feet of Rhoads Belting in narrower widths.

Rhoads Tannate Leather Belting is built waterproof. Its strength and long life mean belt economy. Its unusual grip means power saved and greater output.

This mill has been a Rhoads customer for more than 25 years. Evidently they think it pays to use Rhoads Belts.

J. E. RHOADS & SONS

PHILADELPHIA .....37 North Sixth Street
NEW YORK .....104 Beekman Street
CHICAGO .....324 West Randolph Street
ATLANTA .....70 Forsyth St., S. W.
CLEVELAND .....1224 W. Ninth Street

Factory and Tannery: Wilmington, Del.

Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¾	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	—
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.30	@	2.40
No. 1 Mixed	1.35	@	1.45
No. 2 Mixed	1.05	@	1.10
Ledger & Writings	1.55	@	1.65
Solid Books	1.20	@	1.30
Blanks	1.30	@	1.40
Krafts	1.90	@	2.10
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.85	@	.95
Folded News (oversize)	.55	@	.65
Old Newspapers—			
No. 1	.60	@	.65
No. 2	.55	@	.60
Mixed Papers—			
No. 1	.45	@	.55
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05¼
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	45.00	@	50.00
Chip Board	40.00	@	42.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	.03½	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	03	@	.03¾
New Canvas	.08	@	.09
New Black Mixed.	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	2.25
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.25	@	2.00
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.50	@	1.65
Wool Tares, heavy	3.00	@	3.50
Mixed Strings	1.25	@	1.35
No. 1, New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.25	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.75	@	3.00
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.25	@	1.30
No. 2 Books, light	.85	@	.90
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.15	@	1.20
Container Manila	.90	@	1.00
Old Kraft	2.00	@	2.20
Common Paper	.50	@	.60
No. 1 Mixed Paper	.60	@	.75
Straw Board, Chip	.65	@	.70
Binders Board, Chip	.65	@	.70
Overissue News	.80	@	.90
Old Newspaper	.60	@	.65

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02½	@	.03
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.50	@	1.75
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	1.50	@	1.60

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.04¾	@	.05¾
Common Bogus	.02	@	.02½
Delivered New England points			
Straw Board, rolls .009			57.50
Straw Board in Sheets, basis 35s to 70s			53.50
Filled News Board			50.00
Chip Board			47.50
Single Manila Pulp lined board			57.50 @ 62.50
Single White, patent coated board bender			75.00 @ 82.50
Wood Pulp Board			80.00 @ 85.00
Binder Boards			70.00 @ 75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots			65.00 @ —

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.10
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	2.85
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	1.95	@	2.00
No. 1 Books, Heavy	1.35	@	1.45
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.40	@	1.60
White Blank News	1.75	@	—
Old Kraft	2.00	@	2.20
Print Manila	.70	@	.80
No. 1 Mixed Paper	.55	@	.62½
Overissue News	.70	@	.80
Old Newspapers	.65	@	—
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope and Strings—			
Foreign	3.75	@	—
Domestic	4.00	@	4.12½
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.65	@	1.75
Wool Tares, heavy	1.75	@	—
New Burlap Cutting	2.25	@	2.37½

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.12½	@	—
Silesias, No. 1	.07	@	.07½
New Unbleached	.10	@	.10½
Fancy	.05¾	@	.06
Washable	.04½	@	—
Cottons—Acording to Grades—Blue—			
Blue Overalls	.05	@	.05½
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.09

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.12½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.50	@	1.62½
No. 3	1.00	@	—
No. 4	1.00	@	1.10
No. 2	1.37½	@	—
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	.90	@	1.00
B	.80	@	.90
C	.80	@	.90

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.65	@	—
New No. Shirt Cuttings	.11	@	.11½
Dutch Blues	.02	@	—
Lace Curtains	.05½	@	—
New Checks & Blues	.04½	@	—
Old Fustians	1.80	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	25.00	@	27.00
Sulphite easy bleaching	58.00	@	60.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	80.00
Sulphate			65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

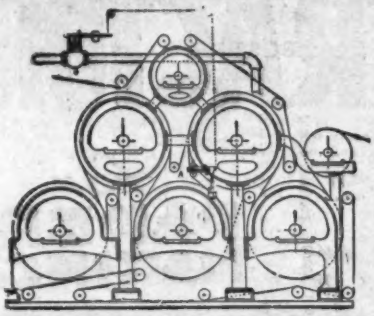
Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.55	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06¼

The Pickles Drying Regulator



WE ARE SAFE IN OUR PROPOSITION

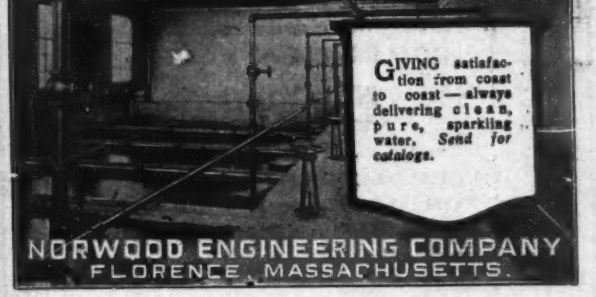
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

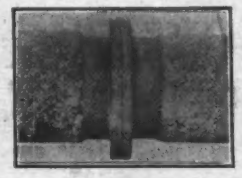
W. F. PICKLES Buckland, Conn.

NORWOOD WATER FILTERS



NORWOOD ENGINEERING COMPANY
FLORENCE, MASSACHUSETTS.

STANDARD-FLANGED-WOOD PIPE



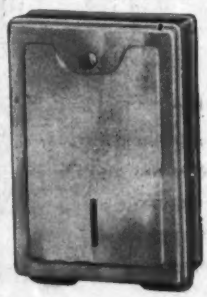
Note: Flange Fits Flush. No Metal on Inside.

Changing the Piping of an entire Industry

It is true that Michigan Wood Pipe with Collar Flanges as illustrated is revolutionizing the Paper Mill Industry. Up to date Paper Mills are making the change as rapidly as possible. Some are changing entire Plant piping at once while others are changing line by line in order that production will not be held up.

The advantages are long life, no discoloration, power saving, larger capacity, light weight, easy to install, easy to take apart without damage, and cheaper.

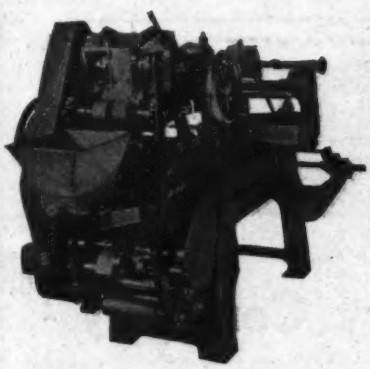
Michigan Pipe Company, Bay City, Michigan



GRIFFITH-HOPE

Dispensing Cabinets
AND
Fixtures
ARE
The STANDARD of the PAPER TRADE
For Towels, Toilet, Napkins, Etc.

GRIFFITH-HOPE CO., West Allis, Wisc.



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Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH,
1702 Robinson St., South Bend, Ind.

TYPE "B" IRON EXTRACTOR for PAPER MAKING

It consists of special magnetic surfaces of great power over which the paper stuff is made to pass. As a result, all the iron and many other foreign substances are completely extracted. Hundreds of these devices are in use daily and no one of them has failed to give complete satisfaction. Write us for Bulletins and full data.

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Electrical Specialists. *Established 1885*

Paper Cutters
Single, Duplex and Diagonal

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LAWRENCE MASS.

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FOREIGN AND DOMESTIC
PAPER MAKERS' SUPPLIES
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WOOD PULP AND RAG PULP

SOLE AGENTS IN AMERICA FOR
ETTLINGEN MITSCHERLICH UNBLEACHED SULPHITE
ROSENBERGER BLEACHED SULPHITE
ZILINA BLEACHED SULPHITE
STAFFEL RAG PULP
BLEACHED AND UNBLEACHED

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

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HELP WANTED

PRODUCTION MANAGER—For waxed paper plant. Must understand all phases and be able to plan production from beginning to end. Permanent well-paying position for man who qualifies. State age, references. Confidential. Address, Box 27-576, care Paper Trade Journal. O-13

LARGE PAPER HOUSE wants a man to cut and finish paper and fill orders from stock. Must be experienced in cutting, counting and finishing paper. Good proposition to the right man. Address, Box 27-578, care Paper Trade Journal. O-6

CAMERON REWINDER FOREMAN—For waxed paper plant in Middle West. Must be perfect operator and understand all operations thoroughly; capable of handling men. In reply state age, references. Confidential. Address, Box 27-575, care Paper Trade Journal. O-13

PAPER TRADE readers find our Service effective in making connections. Individual. Confidential. Personally planned by Jacob Penn, known by all mill owners. Not agency. Jacob Penn, Incorporated, 9 Park Place, New York. tf.

IF YOU are open to overtures for new connection, and qualified for a salary between $2,500 and $25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the calibre indicated. The procedure is individualized to each client's personal requirements; your identity, covered and present position protected. Established seventeen years. Send only name and address for details. R. W. Bixby, Inc., 117 Downtown Building, Buffalo, New York. tf.

MACHINE TENDERS WANTED on cylinder tissues, top felt. Steady work, no dull periods. Address, Box 27-546, care Paper Trade Journal. O-6

WANTED—Superintendent for crepe paper plant in East. Reply, giving experience and reference in first letter. Address, Box 27-547, care Paper Trade Journal. O-13

WANTED—An experienced adjuster on a Lockport machine, both flat and square; also on a Potdevin S O S. State experience and salary expected. Steady position for the right man. All communications will be held strictly confidential. Address, Box 27-502, care Paper Trade Journal. tf.

WANTED—First-class practical soda mill superintendent. One who can organize and control help. Address, Box 27-562, care Paper Trade Journal. O-6

WANTED—Sober, steady machine tender for container mill. Give age, experience, references. Two tours. Address, Box 27-609, care Paper Trade Journal. O-20

WAX PAPER SALESMAN, THOROUGHLY CONVERSANT WITH TRADE IN EASTERN STATES AND FAMILIAR WITH ITS MANUFACTURE. STATE SALARY AND REFERENCES. ADDRESS, BOX 27-611, CARE PAPER TRADE JOURNAL. O-13

OPERATORS with experience in the manufacture of glassine. Address, Box 27-598, care Paper Trade Journal. O-6

CALENDERMEN experienced in the manufacture of glassine. Address, Box 27-599, care Paper Trade Journal. O-6

SITUATIONS WANTED

SALES EXECUTIVE WITH 15 YEARS EXPERIENCE IN MANUFACTURING AND JOBBING OF WRAPPING PAPERS. AT PRESENT CONNECTED. BUT SEEKS A CHANGE FOR REASONS WHICH CAN BEST BE GIVEN IN PERSON. AVAILABLE JANUARY 1st, OR THEREAFTER. HIGHEST REFERENCES CAN BE OFFERED. ADDRESS, BOX 27-581, CARE PAPER TRADE JOURNAL. O-6

SITUATIONS WANTED

PULP AND PAPER MILL SUPERINTENDENT—Wants similar position in sulphite or Kraft pulp and paper mill. 40 years old, 18 years practical experience. Graduate chemical engineer. Has done research work on cooking of sulphite and Kraft pulp, bleaching, beating and soda recovery. Also mill construction. At present in charge of production in a Kraft pulp and paper mill. Address, Box 27-566, care Paper Trade Journal. O-27

SALESMAN—Twenty-five years paper business, good appearance, energetic, able to think and plan work, excellent references. Christian, wants connection where hard work and application will count. Available immediately. Address, Box 27-567, care Paper Trade Journal. O-6

SALESMAN with 12 years experience selling paper and paper specialties desires to represent mill or jobber in New York. No objection to traveling. Age 38. Best references. Address, Box 27-583, care Paper Trade Journal. O-6

POSITION AS MASTER MECHANIC—20 years experience handling men and upkeep; repairs, new work and erecting. Best of reference. Address, Box 27-585, care Paper Trade Journal. O-13

SUPERINTENDENT—Open for position October 1st. Book, bond, writing, waxing, hanging, board and other grades. Can handle help and get results. Go anywhere. Address, Box 27-586, care Paper Trade Journal. N-10

WANTED—Position as machine tender or tour boss. Steady, married, sober. Understand all grades of box and test boards. Can give references as to ability. Address, Box 27-587, care Paper Trade Journal. O-6

BOSS BEATERMAN OR BEATER ENGINEER—Experienced on most all grades. 37 years of age. Good on colors. Steady. Address, Box 27-590, care Paper Trade Journal. O-13

PAPER SALESMAN—Ten years experience calling on jobbing trade Chicago and Midwest territory, desires mill connection. Familiar with coarse wrappings, paper bags and toilet paper. Now employed, wishes to make change. Address, Box 27-589, care Paper Trade Journal. O-6

SALES PROMOTION POST sought by a man thirty-five years of age, seventeen years in paper business; has general executive experience and special aptitude for selling; either personal or management. Unimpeachable character. Enduring connection desired where initiative and enthusiasm can find outlet. Special aim to locate opening where financial participation can ultimately result. Address, Box 27-591, care Paper Trade Journal. O-6

FELT SUPERINTENDENT—Ten years with representative mill making dry felt and flooring. Desires change. Capable of getting production and quality. Best references. Address, Box 27-523, care Paper Trade Journal. tf.

ASSISTANT SUPERINTENDENT — College graduate, chemist, nine years practical experience and research in rag fine writing papermaking and specialties, desires position with opportunity for advancement. Address, Box 27-320, care Paper Trade Journal. tf.

SUPERINTENDENT—Trained in the manufacture of tissues, all grades, plain and creped; high grade Kraft papers, converting specialties, crepes, waxing, crepe towels, and Kraft, waxed Kraft. Address, Box 27-563, care Paper Trade Journal. O-13

A-1 CYLINDER MACHINE TENDER wants position. Have had 19 years experience running machine making all grades of tissue. Thoroughly accustomed to top felt. Sober and steady. Married, have family, and want steady work. Can furnish best references. Address, Box 27-549, care Paper Trade Journal. O-6

WANTED—First-class man, with 20 years experience on all grades of board, desires position as superintendent, tour boss, or would consider position running machine where I could cover cylinder molds and make coucher rolls. Have been superintendent, tour boss and production manager of mill making 200 tons a day, with good results. Address, Box 27-551, care Paper Trade Journal. O-6

SITUATIONS WANTED

POSITION WANTED by a thoroughly experienced paper bag maker, on self-opening, square and flat, and glassine bag machines, with or without printing. Address, Box 27-571, care Paper Trade Journal. O-13

MECHANICAL ENGINEER with five years experience in the manufacture of paper and pulp containers of various designs is seeking connection with a firm manufacturing similar articles. Have had excellent results with waterproofing, coloring and production. Best of references. Address, Box 27-579, care Paper Trade Journal. O-6

MILL OR PRODUCTION MANAGER—Now superintendent of a well known mill, but want to make a change. A splendid business and paper making experience with an excellent production record. Well educated. Address, Box 27-501, care Paper Trade Journal. O-27

CREDIT MANAGER-BOOKKEEPER: Young man, seven years experience with large paper concern, desires new connection with opportunity for advancement. Address, Box 27-532, care Paper Trade Journal. O-6

TOUR BOSS, now employed, wants to make change; all grades box, test and container board; handles help successfully; A-1. on production and repair. Address, Box 27-592, care Paper Trade Journal. O-6

SUPERINTENDENT—Trained in the manufacture of box board specialties, tag and coating mill boards, can guarantee quality, production, efficiency, and good organizer. Address, Box 27-593, care Paper Trade Journal. tf.

SALESMAN—Executive, forty-five, Christian, excellent education, twenty-five years experience in fine papers, ten years as sales-manager, would like good mill connection. No objection to traveling, wide acquaintance in trade, unexceptional business and personal references. Address, Box 27-595, care Paper Trade Journal. O-13

PAPER MAKING MACHINERY DESIGNER AND GENERAL PLANT ENGINEER open after September 1st. Long and practical experience on this class of work, together with a number of years selling experience. Address, Box 27-497, care Paper Trade Journal. tf.

PULP AND PAPER MILL ENGINEER, with many years experience in design, construction and maintenance, desires position. References. Address, Box 27-470, care Paper Trade Journal. O-6

MILL CONNECTION WANTED—Capable experienced salesman desires mill connection. Years of experience in the sales of both coarse and fine paper. Willing to travel. Highest credentials as to ability and integrity. Address, Box 27-490, care Paper Trade Journal. tf.

POSITION WANTED as paper mill manager or production engineer. Extensive experience on rag and wood pulp papers. Services available at once. Can furnish best of references. Address, Box 27-503, care Paper Trade Journal. tf.

AGENCY desired by established sales engineer New York District. Very conversant with paper companies. Address, Box 27-601, care Paper Trade Journal. O-6

PAPER MILL SUPERINTENDENT wants change. Experienced on all grades of combination board and test. Good on colors and knows how to handle help and get quality and quantity. Best of references. Address, Box 27-602, care Paper Trade Journal. O-13

WANTED—Position as assistant superintendent, night or tour boss. Would consider running machine with opportunity for advancement. Age 40, married. Familiar with all types of machines. A-1 reference. Address, Box 27-603, care Paper Trade Journal. O-20

CAPABLE SALESMAN wishes lines for Chicago and vicinity. Tissues, waxed, glassine, specialties. Wide acquaintance jobbers, manufacturers, large consumers. Good executive. Intelligent representation assured. Address, Box 27-604, care Paper Trade Journal. O-6

Look at Your Graveyard of Discarded Equipment
You will find scrapped quick-opening valves all through the pile--discarded because they failed in the pinch--because Old Man Trouble was always around when you had them on the lines.
Installing ordinary valves is just as costly as turning stock into the sewer. You wouldn't do the latter so why do the first? Both show up on the red side.
The new improved SHARTLE Valve stands alone today, as the ONE DEPENDABLE VALVE. Old Man Trouble stays away when Shartle Valves take charge.
What Mills use SHARTLE VALVES? Ask us for the list.
SHARTLE BROTHERS MACHINE CO.
Middletown, Ohio
"I'll Specify
SHARTLE
VALVES
hereafter and avoid all this needless Replacement and Expense"
MEMO
Bill for Valve Repairs and Replacements
SHARTLE BROTHERS
DIVISION OF THE BLACK-CLAWSON COMPANY
Paper Mill Machinery

SITUATIONS WANTED

WOULD LIKE POSITION as assistant superintendent. 33 years old, married, one child. Experience on cylinder, Harper and Fourdrinier. Finishing room and shipping, crepe, napkins and tissues. Address, Box 27-605, care Paper Trade Journal. O-6

RAG AND OLD PAPER plant foreman open for position. Many years experience on all grades. References. Address, Box 27-606, care Paper Trade Journal. O-13

MISCELLANEOUS

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 1828. Builders of cylinder moulds, couch and felt rolls, dandy rolls. We cover dandies and cylinders tight, for fast running machines. J-5-27

WANTED—Mill ends and job lots in rolls or flats in any quantity, all grades. Also boards. Joseph Goldstein & Sons, 1302-9 N. Halsted Street, Chicago, Illinois. tf.

WANTED—Side or odd lot rolls ten to ninety pound basis. The larger the quantity the better we like it. Address, Box 27-481, care Paper Trade Journal. tf.

SEND YOUR ODD LOT LIST of coarse and fine papers together with samples to Goldman Paper & Paper Stock Co., 414 So. Front Street, Philadelphia, Pa. tf.

ACCOUNTANT—Books opened, closed, audited. Bookkeeping services for firms without bookkeeper. Tax Reports. Emil Mack, 507 Fifth Ave., New York City. Murray Hill 5021. O-13

TREASURER AND DIRECTOR WANTED for modern paper mill, adjacent to New York and Philadelphia, showing substantial profits. Plenty of orders ahead; excellent, established selling connections. Investment, $50,000.00 required for additional working capital—not for machinery. Good salary for capable active man. Correspondence confidential. Address, Box 27-600, care Paper Trade Journal. O-13

CELLULOSE PROCESS

Desire to make connection with paper or pulp interests for formation of Holding Corporation.

NEW REDUCING PROCESS

for vegetable and wood fiber

WITHOUT PRESSURE

Will erect small demonstration plant in South. Control manufacturing rights for U. S. A. and Mexico. No Promotion scheme wanted. Address, Box 27-607, care Paper Trade Journal. O-6

WANTED

WANTED—Modern Fourdrinier part, taking wire 60 to 70 ft. long and 120 to 126 inches wide. Must be in good repair and reasonably priced. Address, Box 27-582, care Paper Trade Journal. O-13

WANTED—A second hand Ream Cutter 64" or more. Address, Straubel Paper Company, Green Bay, Wis. O-20

WINDER WANTED—72 to 80 inches wide, to wind rolls 36 inches in diameter or larger. Address, Box 27-555, care Paper Trade Journal. O-6

WANTED

WANTED—Second hand Slitter approximately eighty inches wide. Address, Box 27-482, care Paper Trade Journal. tf.

WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf.

CAMERON SLITTER—Wanted, 50" or 60" machine; must be in A-1 condition. In reply give all details. Address, Box 27-574, care Paper Trade Journal. O-13

FOR SALE

2—BONNOT 6' DIA. X 60' ROTARY DRYERS OR KILNS, ALSO NEW SPARE PARTS; WILL BE SACRIFICED FOR QUICK SALE. STEIN-BRILL CORP., 25 CHURCH STREET, NEW YORK CITY. O-20

FOR SALE—Second-hand 1200 lb. wood tub N. & W. beater. In good condition. The Noble & Wood Machine Co., Hoosick Falls, N. Y tf.

FOR SALE—6 Used Jones Imperial Jordans, with bronze or steel fillings. Will sell "as is" or factory rebuilt. THE NOBLE & WOOD MACHINE CO., Hoosick Falls, N. Y. tf.

FOR SALE—One 48" x 75" Hooper 2-color press, slotted cylinders, chain feed, clutch pulley. Good condition. Address, Chas. N. Braun Machinery Co., 1831 Lafayette St., Fort Wayne, Indiana. O-6

FOR SALE—Three-color Rotary printing press, 36" cylinders, 65" wide. Address, Box 27-596, care Paper Trade Journal. O-6

FOR SALE—Paper mill. Can be put in first-class running condition at small expense. An abundance of clear water. Excellent shipping facilities. Would make a dandy strawboard mill. Can be purchased at a bargain. For full particulars address Box 27-608, care Paper Trade Journal. O-13

FOR SALE

1—72" Hamblet Single Cutter with 24 roll back stand.
1—84" Beloit heavy duty duplex.
1—84" Black-Clawson heavy duty duplex, with duplex slitter.
1—52" Moore & White Cutter with Moore & White Layboy and Backstands.
1—48" Moore & White Cutter with Moore & White Layboy and Backstands.
1—42" Moore & White Cutter with Moore & White Layboy and Backstands.
1—60" Hamblet Cutter with 10 roll Backstands.
1—110" Moore & White Cutter with Moore & White Layboy and Backstands.
1—82" Heavy duty Hamblet Single Cutter with 24 roll Backstands.
2—58" Moore & White Single Cutters.
4—54" Moore & White Single Cutters.
6—48" Moore & White Single Cutters.
1—57" Hamblet Duplex Cutter. Heavy Duty.

The Shartle Brothers Machine Co.,
Middletown, Ohio tf.

FOR SALE

HEADQUARTERS
For Good Used Machinery

ROTARY DRYERS AND KILNS
6—4' x 30' American Process.
2—6' x 60'.
1—6' x 100'.
1—8' x 125'.

PULPER MIXERS
1—W. & P. size 17-300 gals.
Also several smaller sizes.

TUBE AND ROD MILLS
1—3' 6" x 12' Allis Chalmers.
1—4' x 16' Schmidt.
5—5' x 22' Allis Chalmers.
1—5' 6" x 22' Schmidt.
1—6' x 22' Gates.

SULPHUR BURNERS
1—3' x 8' Glens Falls.
4—4' x 10' Glens Falls.
4—4' x 20' Glens Falls.

EVAPORATORS
1—Stokes Triple Effect, 1,000 sq. ft.
1—Scott Triple Effect, 1,250 sq. ft.
1—Swenson Triple Effect, 1,750 sq. ft.
2—Swenson Triple Effect, 3,300 sq. ft.

ROTARY FILTERS
2—6' x 4' Oliver.
2—6' x 6' Oliver.
2—6' x 6' Oliver, Acid Proof.
1—9' x 9' Oliver, Acid Proof.

SEND US YOUR INQUIRIES
WE BUY YOUR IDLE EQUIPMENT

CONSOLIDATED PRODUCTS COMPANY, INC.
15 PARK ROW NEW YORK, N. Y.
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FOR SALE

One 192" Hamblet duplex sheet cutter with Hamblet layboy and roll stands. Practically new.

Frank H. Davis Company,
175 Richdale Avenue,
Cambridge, Mass.

FOR SALE

1—72" Model 10 Cameron.

11—Dryers 48" x 110".

60" trim Black-Clawson Fourdrinier machine.

Several White cedar stuff chests, A-1 shape.

1—48"—3 cylinder machine.

1—70"—2 cylinder machine.

Several Chippers.

Four deck Beloit frames. These are modern and extra heavy.

One Rythor & Pringle Multiple Saw Slasher. Will cut 32".

One Farrel Roll Grinder.

One No. 2 Lannoye Pulper.

One 61" Holyoke Super-Calender.

The Shartle Brothers Machine Company
Middletown, Ohio tf.

Dayton High Speed Beaters
The Dayton Beater & Hoist Co., Dayton, O.

—Advantages—
Heavier Furnishes
Faster Beating
Greater Output
More Uniform Product
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Classified Advertising Brings Results

FOR SALE

6—Dayton Beater and Hoist Iron tub Beaters, rolls 56 x 50.

1—Wood tub Beater, practically new. Roll 70 x 66. Made by Emerson Mfg. Co.

1—Heavy duty Beloit 114" Paster.

4—Jones Washers. Iron tubs. Rolls 67 x 60. Good shape.

1—Dayton Beater and Hoist Iron tub Beater. A-1. Rolls 64" diameter, 54" face.

1—Breaker Roll 64" diameter by 54" face.

1—Downingtown Iron tub Beater with Brownell Buehler perforated back fall. Rebuilt for immediate shipment. Roll 44" x 44".

The Shartle Brothers Machine Co.
Middletown, Ohio tf.

SITUATIONS WANTED

MACHINE TENDER with fifteen years experience on bond, envelope and manila papers desires to make a change. State wages in first letter. Married. Address, Box 27-610, care Paper Trade Journal. O-13

ENGINEER—Technically trained, broad experience in pulp, paper mill design. Well versed in construction, plant operation, maintenance, production, machinery design and its construction. Capable of assuming full responsibility from drawing board to erected job. Thoroughly seasoned, planning, routing, and layout work. Address, Box 27-588, care Paper Trade Journal. O-6

WHO WANTS A FIRST-CLASS BOSS BEATERMAN AND COLORMAN, experienced on rag and sulphite papers, bag papers, fibers and boards? Well recommended. Write or wire. Joseph Sergeant, 331 Pine Street, Reading, Penna. O-20

FOR SALE

2000 lbs. Noble & Wood Beater, 3 Dillon 1400 lbs., 2 Jones 1400 lbs., to be equipped with new Shlick Super-Speed tubs for 100 to 120 feet circulation per minute, for two to three times the output. Leo Shlick Engineering Co., 314 Beacon St., Boston, Mass. Builders of the Three-In-One Super-Speed Beater and the Precision Beater. All sizes. O-13

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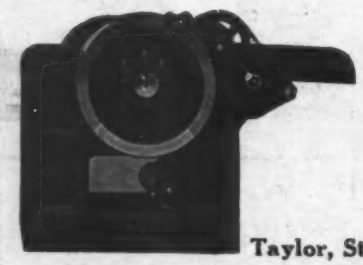

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Taylor, Stiles & Company
Riegelsville, N. J.

FOR SALE
New Equipment

1—"Impco" Knotter Screen Design No. 4 Rotary Type, belt driven, pulley 60" dia. x 5" face.

1—Valley Iron Works Shaker Screen steel construction ¾" x 1½" slots upper tray, ⅜" holes lower tray arranged for belt drive.

1—Valley Iron Works Rechipper, disc equipped with 8 knives and 3 bed knives, pulley 22" dia. 6" face. Speed 250 R.P.M.

GOOD USED EQUIPMENT

1—84" Union Iron Works Chipper 3 - 21" knives with C. I. spont 17" dia. wood.

1—83" Baker Chipper 4 - 16" Knives with C. I. Spont 14" wood.

2—9 ft. Dia. 30 ft. long Manitowoc Incinerators with drives.

Diffusers and Tanks for Soda or Sulphate

9—9' 6" dia. x 18 ft. high Diffusers.
2—12' 6" dia. x 20 ft. high storage tanks.
4—14 ft. Dia. x 10 ft. high Caustic Tanks.
3—12 ft. Dia. x 6 ft. high dissolving tanks.

Technical Economist Corporation
40 Rector Street,
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Cable Herenco

FOR SALE

1—64" Super-calender stack, manufactured by the Textile Manufacturing Company, Providence, R. I. Equipped with six paper rolls and eight steel rolls, six of the steel rolls being drilled with a 2½" hole for high steam pressure. Drive for this stack manufactured by Cutler-Hammer Mfg. Company. Size 14 clutch, type RS No. 4247. Machine is driven by a 150 HP and a 5 HP G. E. motor. In addition to the 14 rolls now in the stack, can furnish 4 extra paper rolls.

1—108" R. H. nine-roll Web Super-Calender, manufactured by the Norwood Engineering Company.
Bottom chilled iron roll 26" x 109" x 16"
Top chilled iron roll 22" x 109" x 12"
3 Inter. chilled iron roll 12" x 109" x 8"
4 Inter. Paper Rolls 16" x 108" x 8"
Compound lever pressure, hydraulically controlled, revolving type power operated reel, with individual motor Two motor type drive, consisting of a 100 HP and a 10 HP motor. One extra paper roll on hand.

(Motors not for sale)

BOTH MACHINES IN FIRST-CLASS CONDITION. WRITE US FOR ANY ADDITIONAL INFORMATION DESIRED, AND PRICES.

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WATERTOWN, N. Y. O-6

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INTERNATIONAL WIRE WORKS
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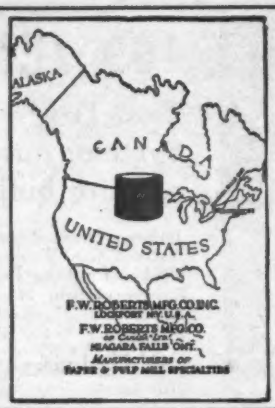

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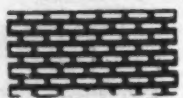

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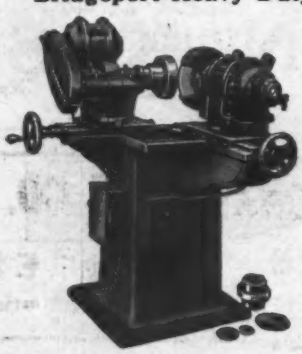

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INDEX TO ADVERTISERS

A

	Page
Acer & Co., Ltd.	—
Air Preheater Co.	—
Ajax Paper Mills, Inc.	—
Albany Felt Co.	—
Allen-Sherman-Hoff Co.	—
American Manganese Bronze Co.	—
American Spiral Pipe Co.	—
American Tel. & Tel. Co.	—
American Voith Contact Co.	—
American Well Works	13
American Wolmanized Lumber Co.	—
Andersen & Co., J.	43
Appleton Machine Co.	95
Appleton Wire Works	89
Appleton Woolen Mills	45
Armstrong Cork & Insulation Co.	—
Arnold, Hoffman & Co., Inc.	89
Atterbury Bros.	—

B

Baxter & Co., B. M.	—
Badenhausen Corp.	—
Bahr Bros. Mfg. Co.	—
Beloit Iron Works	Front Cover
Bemis Associates	71
Berry, C. R.	95
Biggs Boiler Works	16
Bird Machine Co.	31
Black-Clawson Co.	41
Blaw-Knox Co.	11
Borregaard Co., The	98
Bowsher Co., N. P.	81
Bowsher, S. F. Co., Inc.	—
Bradley Mfg. Co., A. J.	95
Bridgeport Safety Emery Wheel Co.	94
Bristol Co.	89
Brown Co.	79
Bulkley, Dunton & Co.	96
Butterworth & Sons, Co. H. W.	69

C

Cameron Machine Co.	—
Carey, James L.	95
Castle & Overton, Inc.	54
Central Alloy Steel Corp.	—
Central Machine Works	—
Chandler & Price Co.	73
Chicago Belting Co.	—
Cincinnati Rubber Manufacturing Co.	—
Clark-Aiken Co.	94
Cleveland Worm & Gear	—
Clipper Belt Lacer Co.	12
Columbian Paper Co.	94
Columbian Rope Co.	—
Combustion Engineering Corp.	95
Connersville Blower Co.	54
Consolidated Products Co. Inc.	87
Cook's Sons, Adam, Inc.	—
Corn Prod. Refining Co.	—
Craig & Co., H. G.	79
Crescent Belt Fastener Co.	73
Cutler-Hammer Mfg. Co.	—

D

Davis Co., Frank H.	87
Dayton Beater & Hoist Co.	87
Diamond Alkali Co.	—
Dietz Machine Works	—
Dilts Machine Works, Inc.	35
Dominion Eng. Wks. Ltd.	—
Downington Mfg. Co.	99
Dorr Company	—
Dowd Knife Works, R. J.	22
Draper Bros. Co.	98
Dupont DeNemours & Co., E. I.	—

E

Eastwood Wire Mfg. Co.	15
Economy Pumping Machinery Co.	—
Electro Bleaching Gas Co.	—
Electrical Testing Laboratories	89
Elixman Paper Core Co.	93
Emerson Mfg. Co.	39
English China Clays Sales Corp.	—
Erie City Iron Works	94
Erie Malleable Iron Co.	—
Estes, Inc., L. V.	89

F

Fairbanks, Morse & Co.	89
Farnham Mfg. Co.	91
Farrell Foundry & Machine Co.	—
Fawcus Machine Co.	—
Ferguson, H. K.	77
Ferguson, Hardy S.	90
Fifth Ave. Bldg. Co., The	71
Fitchburg Duck Mills	—
Fitchburg Screen Plate Co.	4
Flexible Steel Lacing Co.	—
Foreign Paper Mills, Inc.	77
Foxboro Co., Inc., The	—
Franklin Paper Co.	—
Frederick Iron & Steel Co.	—
Fulton Engineering Co.	75

G

Gatti Paper Stock Corp.	89
General Chemical Co.	89
General Dyestuff Co.	—
General Electric Co.	6-7
Gibbs-Brower Co., Inc.	—
Goodrich Rubber Co., B. F.	—
Goodyear Tire & Rubber	—
Graham Brothers	—
Graton & Knight Co.	—
Green Bay Barker Machine & Tool Works	—
Green Bay Wire Works	—
Griffith-Hope Co.	83
Griley-Unkle Eng. Co.	—
Gulf-Electric Company	—

H

Hamblet Machine Co.	84
Hammermill Paper Co.	—
Hardy & Sons Co., W. A.	—
Hardy, George F.	90
Harrington & King Perforating Co.	8
Harris-Seybold-Potter Co.	—
Hauser-Stander Tank Co.	—
Hayton Pump & Blower Co.	89
Healy-Ruff Co.	—
Heller & Merz Co.	77
Hendrick Mfg. Co.	94
Hercules Powder Co.	—
Hicks, Inc., Daniel M.	—
Higman Co., John W.	—
Hockley, C. C.	95
Horsburgh & Scott Co.	89
Hudson - Sharp Machine Co.	—
Hunt Machine Co., Rodney	—
Huyck & Sons, F. C.	—

I

International Acceptance Bank, Inc.	—
International Paper Co.	69
International Pulp Co.	95
International Salt Co.	—
International Wire Works	89

J

Jeffrey Mfg. Co.	47
Jenkins Bros.	96
Johaneson Wales & Sparre, Inc.	—
Jenssen Co., G. D.	91
Jolbert & Frenett	—

K

Kalamazoo Vegetable Parchment Co.	—
Kalamazoo Tank & Silo	93
Kalbfleisch Corporation	—
Keller Co., E. J.	84
Knox, H. D. & Co.	—
Knox Woolen Co.	96
Koegel's Sons, Inc., Chas.	—

INDEX TO ADVERTISERS

L

	Page
Lacey Securities Co.	—
Langston Co., Samuel M.	20
Lawrence Machine Co.	—
Lefren, Karl A.	95
Lennig Co., Charles	—
Leshner Paper Stock Co.	—
Lindsay Wire Weav. Co.	77
Link-Belt Co.	—
Little, Inc., Arthur D.	89, 90
Lobdell Car Wheel Co.	—
Locke Regulator Co.	—
Lockport Felt Co., Inc.	14

M

McCaw, Jas. H.	—
McKenna & Phelps	81
Machinery Co. of Amer.	—
Manitowoc Eng. Corp.	—
Mason Regulator Co.	—
Mathieson Alkali Works, Inc.	—
Mendelson Brothers Paper Stock Co.	91
Michigan Pipe Co.	83
Miner-Edgar Co.	79
Mississippi Power Co.	37
Missisquoi Pulp and Paper Co.	92
Moore & White Co.	16
Morrison, J. L., & Co.	—
Morse Chain Co.	—
Mundt & Sons, Charles	92
Murray Mfg. Co., D. J.	93

N

Nash Engineering Co.	95
National Aniline & Chemical Co., Inc.	21
National Graphic Arts Exposition, Inc.	—
Naylor Spiral Pipe Co.	—
Neumeyer & Dimond	—
New Departure Mfg. Co.	—
Noble & Wood Mach. Co.	—
Norma-Hoffmann Bearing Corp.	—
Northwest Paper Co.	—
Norton Co.	—
Norwood Engineering Co.	83

O

Oakes Co., Roland T.	84
Oakite Products, Inc.	—
Ohio Cultivator Co.	—
Oliver Continuous Filter	19
Orbison & Orbison	91
Orr Felt & Blanket Co.	—

P

Palmer-Bee Company	—
Paper Converting Mach. Co.	—
Paper Machinery, Ltd.	4
Paper Makers Chem. Co.	—
Paper and Textile Mach. Co., The	—
Paper Mill Laboratories	—
Parrish, A. L.	83
Parsons & Whittemore, Inc.	—
Perkins & Son, Inc., B. F.	12
Perkins-Goodwin Co.	49
Philadelphia Gear Co.	3
Philadelphia Quartz Co.	79
Pickles, W. F.	83
Potdevin Machine Co.	98
Price & Pierce, Ltd.	75
Pusey and Jones Co.	51

R

Reading Chain & Block Co.	10
Rhoads & Sons, J. E.	81
Riordon Sales Corp.	—
Roberts Mfg. Co., F. W.	92
Robison Products Corp.	—
Ross Engineering Corporation, J. O.	95
Rotospray Mfg. Co.	89
Ruths Accumulator Co.	9
Ryther & Pringle Co.	17

S

Sabin Robbins Paper Co.	97
Salomon Bros. & Co.	89
Sargent Lester	—
Schofield Co., Inc., Gilbert J.	—
Shartle Bros. Machine Co.	86, 87, 88
Shepard Electric Crane & Hoist Co.	—
Shuler & Benninghofen	—
Simmons, V. D.	—
S. K. F. Industries	2
Smith, Frederick L.	95
Smith and Winchester Manufacturing Co.	8
Solvay Process Co.	—
Standard Oil Co.	Back Cover
Standard Paper Co.	—
Stearns Lumber Co., A. T.	—
Stebbins Eng. & Mfg. Co.	95
Stevens, John A.	95
Stickles Steam Spec. Co.	—
St. Regis Paper Co.	81, 88
Sutherland, D. Manson, Jr.	95

T

Taylor, H. S.	90
Taylor Instrument Co.	—
Taylor Stiles & Co.	88
Technical Econ. Corp.	88
Terry Steam Turbine Co.	—
Texas Gulf Sulphur Co.	75
Textile Finishing Machinery Co.	84
Thwing Instrument Co.	—
Ticonderoga Mach. Wks.	—
Timken Roller Bearing Co.	—
Trimbey Machine Works	98
Turner Halsey Co.	14

U

Union Talc Co.	—
United Filters Corp.	89
U. S. Cast Iron Pipe Co.	—
U. S. Gypsum Co.	—
U. S. Testing Co.	—

V

Vacuum Oil Co.	—
Valley Iron Works Co.	33
Vanderbilt Co., R. T.	—

W

Waldron Corp., John	10
Walworth Co.	5
Walmsley Co., Chas.	—
Walsh Wiedner Boiler Co.	—
Warren Steam Pump Co.	—
Waterbury Felt Co.	92
West Virginia Pulp and Paper Co.	71
Westinghouse Electric & Manufacturing Co.	18
Whitaker Paper Company, The	—
Whitfield Paper Wks., Inc.	—
Williams & Co., C. K.	94
Worthington Pump & Mach. Co.	—

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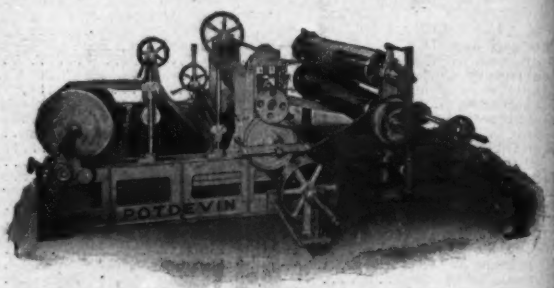

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